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ABSTRACT

The nine issues of EPIEgram in this collection provide information about educational materials, educational technology, and elementary and secondary educational concerns. The following articles are included: (1) Designer Texts--Macmillan-McGraw To Offer Custom School Books; (2) Children's Lit is Alive and Well; (3) Swear Words, Satanism, and Sex; (4) Teachers are Technophiles; (5) Integrated Instructional Systems--Evaluating and Selecting One; (6) New Macs for the Classroom; (7) Developers Gear up for the Mac; (8) Does "Writing To Read" Work?; (9) Copyright Rules for VCR Use; (10) "Impressions" Censorship Builds; (11) Evolution Update--Victory for Science; (12) Dealing with Publishers' Reps; (13) Videodisc and Textbook Merge; (14) How To Evaluate Software; (15) Software Industry Trends; (16) School of the Future? Education Utility is Coming; (17) Magazines Enliven Classrooms; (18) More Copyright Info Readily Available; (19) State Software Consortium Debuts; (20) Learning from Television News; (21) Taping Tips from the VCR Savants; (22) New Books Examine the Media; (23) Publishers Must Change Basals; (24) Honors Bestowed on Children's Books; (25) Technology Future Watch; (26) Are Science Texts Improving?; (27) IBM Introduces "Writing To Write"; (28) Where To Find Reviews; (29) Dissection Controversy Builds; (30) CD-ROM--Status Report; (31) Bestsellers for Children; (32) Are Computer Monitors Safe?; (33) How To Design a WritingLand; (34) Michigan Sets Pace for Consortium; (35) Education Satellite May Become Reality; (36) Apple Introduces Low Cost Printers; (37) New Folk-tale Videos Feature Celebrities; (38) Great Books Foundation Targets Early Readers; (39) Children's Books--Oldies Are Goodies; (40) Primary Math Texts Result from Research; (41) New Calculators Gain Popularity; (42) Math Maverick Reports Success; (43) National Computer Network Before Congress; (44) Tandy Offers Teachers New Home Computer; (45) Electronic Encyclopedia Products Available; (46) Apple II Card Now Ready; (47) Museum Microscope Suited for Classrooms; (48) Middle East Coverage Rated Poor; (49) Children's Classics Available in Spanish; (50) Teacher Television To Debut in Fall; (51) Major New Series from Children's Television Workshop; (52) Sexism in Textbooks; (53) Interactive Multimedia Comes of Age; (54) Avoid Monitor Burn-In. Most of the issues feature a column on research and reports. (DB)

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Designer Texts

MACMILLAN-MCGRAW TO OFFER CUSTOM SCHOOL BOOKS

The technology for producing custom textbooks is now in place, and within the next year publisher Macmillan-McGraw will begin to work with school districts to design books geared to their particular needs.

"We are prepared to have discussions with superintendents this year about how they would want custom textbooks structured," says Charlotte Frank, Vice President of Research and Development for Macmillan-McGraw.

A system now in operation at McGraw-Hill is producing college level custom textbooks. Designed to suit the needs of an individual professor, the system can generate as few as 20 to 30 copies of a custom-designed book--and do it in 48 hours and at a price no higher than the cost of a standard textbook.

Educators have long talked about customizing as a means of solving some of the problems that plague school textbooks. Custom texts would allow a school district, a state, or other group to match the contents of its textbook to its curriculum, to design materials reflecting its student population, or to offer a particular approach or emphasis to a subject. Critics have complained that textbooks, in trying to be all things to all people, offer only superficial coverage of too many topics.

The custom textbooks produced by Macmillan-McGraw would draw on a database of new materials as well as existing materials from all the school companies under the Macmillan-McGraw umbrella, which include Random House, Gregg, Glencoe, Science Research Associates, CTB, Barnell-Loft, and Merrill.

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There is one hitch, however. The technology does not yet handle color at all and can include halftones only in a limited way. But these issues are expected to be resolved over the next year or two.

Results of the college customized publishing program begun last February have been "overwhelmingly positive," according to Robert Lynch, Director of Custom Publishing at McGraw-Hill. Over 100 colleges are using the first textbook to be developed in this fashion, Meigs and Meigs's **Principles of Accounting**. This fall the program has been expanded to include custom textbooks in constitutional law and chemistry.

Exactly how this technology will be applied to Macmillan-McGraw's school publishing business has yet to be decided, but here's the way it's working at the college level:

HOW IT WORKS

McGraw-Hill develops a database of material relevant to a particular course: a core textbook, journal articles, laboratory experiments, case studies, newspaper reports, and so on. The professor receives a catalog of the contents of the database. He or she can call an 800 number and order books made up of the various elements in the database, in any order. If the professor wants material not in the database, McGraw will try to clear permission to include it.

On receiving the order, the system selects the items from the database and provides a table of contents, running heads, index, and pagination. A comp copy with a simple binding is produced for the professor, who can look it over and request changes.

Then an 8 1/2 x 11 book, with perfect binding and a laminated cover that even includes the professor name, the course name and the school, is generated and sent to the professor through the college bookstore. If the professor orders the same book the following year, he will find that McGraw has revised any outdated material in the database, such as changes in the tax law for an accounting book.

The system for customizing textbooks was worked out in partnership with Eastman Kodak, who developed proprietary software. It uses a Sun workstation and a Unix environment.

The cost of using this system results in prices that may be higher per page but are lower overall than the standard textbook, because much material can be eliminated, according to Lynch. The school pays for only what is used and needed in a class.

"This is not a simple process for the publisher," says Lynch. "It

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MACMILLAN-MCGRAW TO OFFER CUSTOM SCHOOL BOOKS...

requires editorial inventiveness and thought to build the databases. We also have to work with authors to get them to understand the technology and develop new kinds of textbooks."

While he believes there will always be room for the traditional text, Lynch predicts that in ten years any publisher who wants to stay in business will have to be able to produce custom texts.

McGraw-Hill projects the ultimate stage for the custom publishing system will be an on-line database. Teachers and students will have a choice of interacting with the material on-line, printing their own textbook at a local publishing center, or ordering a text from the publisher.

How closely the school textbook program will follow the college model remains to be seen. Ms. Frank stresses that the Macmillan-McGraw school program in custom publishing will be developed only after meetings with educators to determine what schools want.

Children's Lit Is Alive and Well

KIDS READ "REAL BOOKS," STUDY FINDS

Announcements of the demise of children's literature in the classroom may be premature. Fifty percent of all schools surveyed recently use trade books in conjunction with a basal reading series to teach reading skills.

This was one of the findings of a survey conducted by the Association of American Publishers (AAP) in the twenty states identified as being most active in their use of children's books to teach reading.

Twenty percent of schools surveyed use children's trade books and ancillaries as the sole components of their reading curriculum. Overall, children appear to spend nearly half their school reading instruction time with real books. About 75% of all books used in the classroom are fiction. The use of nonfiction books for particular subjects is limited.

Classroom teachers maintain and build classroom libraries for independent reading and read-alouds, and they purchase multiple copies for small-group instruction. The vast majority of titles are selected by individual classroom teachers, who decide which book to use either by their own personal review or on recommendations from other teachers.

The report held that the growth of the whole-language or integrated language arts movement has made a significant contribution to this instructional trend.

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The Top Twelve

CHILDREN LIST THEIR FAVORITE BOOKS

Here are the books that children named their favorites in a poll conducted by Reading Is Fundamental. Check your library! All of the titles are available in paperback.

1. **Charlotte's Web** by E. B. White
2. **Superfudge** by Judy Blume
3. **Where the Red Fern Grows** by Wilson Rawls
4. **Tales of a Fourth Grade Nothing** by Judy Blume

(tie) **Honey, I Shrunk the Kids** by B. Hiller and E. Faucher

6. **Indian in the Cupboard** by Lynne Banks

(tie) **Charlie and the Chocolate Factory** by Roald Dahl

8. **James and the Giant Peach** by Roald Dahl

(tie) **There's a Boy in the Girls' Bathroom** by Louis Sachar

10. **Where the Sidewalk Ends** by Shel Silverstein

(tie) **Island of the Blue Dolphins** by Scott O'Dell

12. **The Big Friendly Giant** by Roald Dahl

Swear Words, Satanism, and Sex

LITTLE RED RIDING HOOD IS SEEN AS THREAT BY CENSORS

The number of attacks on what children read in school is on the rise, with the big three topics preoccupying censors being swear words, satanism, and sex.

Censorship attempts in the schools totaled 244 last year, up from 172 the previous year, according to the eighth annual survey by People for the American Way, a constitutional liberties group.

The censors' success rate has dropped, however, with only one-third of the challenges resulting in works being banned. Last year's rate of success was fifty percent, and this decrease in effectiveness is attributed to schools' developing sound policies to deal with such challenges.

Most notable for its inclusion on the list of works that censors attempted to ban is the **Impressions** reading series, featuring

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SWEAR WORDS, SATANISM, AND SEX...

selections by such authors as Martin Luther King and C. S. Lewis. This Holt, Rinehart and Winston series is a particular target of the religious right and topped the list of material most frequently attacked this year. Five schools have removed the series from their classrooms.

Also on the list of challenged works were "Little Red Riding Hood," Shel Silverstein's **Where the Sidewalk Ends,** Maya Angelou's **I Know Why the Caged Bird Sings,** as well as some old favorites of the censors: John Steinbeck's **Of Mice and Men**, J.D. Salinger's **Catcher in the Rye**, and **Go Ask Alice** (anonymous author).

"We're now seeing a resurgent far right assault on entire curricula," says Arthur Kropp, President of People for the American Way. The censorship juggernaut is driven by the same fear behind the far right's 'culture war' on art, television and music: the conviction that ideas are dangerous."

The far right is mounting more ambitious and aggressive challenges in the schools, according to Kropp, who feels the **Impressions** controversy "could be the first ripple of a new wave of organized censorship challenges during the 1990s."

Attempted censorship occurred in every region of the country, and California, with 70 incidents, had more activity than any other state. Attacks on the teaching of evolution persisted along with opposition to AIDS-prevention instruction and sex education. A dictionary was removed from a New Jersey elementary school classroom after a complaint about sexually-explicit definitions.

"Our research shows that in communities where schools and parents fight back, the censors rarely win," says Donna Fowler, Issues Director for People for the American Way.

Classrooms as Ad-Free Zones

CONSUMERS UNION OFFERS GUIDELINES

Consumers Union believes that schools should be commercial-free zones. The group advised in a recent issue of Consumer Reports that if business-sponsored materials are used the classroom, teachers should be certain that the materials

* are factual
* present all relevant views
* do not mislead by omission
* avoid ethnic, age, racial, and sex stereotypes
* omit brand and corporate names in illustrations and text, and avoid even implied sales messages
* encourage students' critical evaluation

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Home Computer Program is Launched

BUT NO APPLE FOR THE TEACHER YET

The National Education Association's Home Computer Program for its members has moved forward with the announcement of the NEA Edstar computer from IBM. The Apple NEA computer--expected to be a less expensive version of the Macintosh that will run Apple II software--is not yet ready and probably won't be until the first of the year.

These specially designed computers are the result of research among the NEA's members to determine the specifications for a home computer that would help teachers manage their classrooms and homes, develop instructional materials, and do research. Available only through the NEA, the computers will be offered at a special price and with a financing plan.

IBM and Apple were chosen as partners to develop the hardware and software for the 2 million-plus NEA membership. It is expected that teachers will choose the computer brand that is compatible with the computers used in their school or classroom.

The IBM version of the computer is a special edition of the newly launched PS/1, preloaded with programs the NEA believes will make a teacher's work easier. Included in the package will be software for Microsoft Works; Excelsior Grade 2, an electronic grade book; Express Publisher, which includes type and art for publications and correspondence; IBM Linkway; Prodigy, an interactive, on-line personal service; and Promenade, an on-line service of educational resources and references.

The Home Computer Program is part of a major effort by the NEA to bring teachers and other school employees into the technological age at a faster rate.

Teachers are Technophiles

POLL SHOWS ENTHUSIASM FOR COMPUTERS

Teachers may need assistance with computer technology, but their faith in it appears to be boundless.

Ninety-one percent of teachers who participated in a recent survey believe that computers could be effective tools for helping students develop basic reading and writing skills. Eighty-five percent think that computers have already improved the quality of education for students by helping them learn more and by allowing for more individualized instruction.

Over a thousand classoom teachers were polled for the survey, called The Computer Report Card: How Teachers Grade Computers in

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TEACHERS ARE TECHNOPHILES...

the Classroom, conducted by The Wirthlin Group and funded by IBM.

Eighty-two percent of teachers surveyed believe that computers should be introduced during elementary school. Well over eighty percent feel that computers improve student motivation, release students' creativity, and make students more confident.

While 38 percent say that inadequate teacher training or lack of computer experience is the greatest obstacle to more effective use of computers, 68% find the biggest hurdle to be limited financial resources in their school system.

Eighty-eight percent are in favor of government funding to give all students equal access to computers. Students from less affluent schools who do not have access to computers are at an educational disadvantage, 90% of teachers say.

Integrated Instructional Systems

EVALUATING AND SELECTING ONE

by Paul Resta, Director
Center for Technology and Education
University of New Mexico

To assist schools in making buying decisions about integrated learning (or instructional) systems, EPIE Institute recently published **The Integrated Instructional Systems Report.** The following is an excerpt from it.

A district should choose an integrated instructional (or learning) system that best fits its philosophy, curriculum, environment, and student needs. This isn't an easy task and no one person should attempt to do it. The selection of a system must be a collaborative effort.

The district superintendent or associate superintendent for instruction should organize a district-wide committee that includes curriculum area specialists, teachers, computer education specialists, principals, and district evaluation experts.

Staff assistance should be made available to the committee to help acquire information, maintain liaison with the vendors, and make meeting and site-visit arrangements. The issues that the committee should clarify are:

* the specific instructional needs, grade levels, content areas, state or district-mandated competencies, and objectives to be addressed

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* the target student population and schools to be served
* the instructional resources (including microcomputer hardware and software) available within the district
* the budget/cost constraints for the acquisition of new systems.

Once these determinations are made, the committee should:

Request system information from vendors, including the scope and sequences of courseware, hardware requirements, staffing and space requirements, costs, and so on. They should contact all vendors of systems related to their areas of need.

Request and review copies and evaluation studies of integrated learning systems prepared by other school districts. For example, the New York City Board of Education's study of teacher evaluations of integrated learning systems entitled **Computer Pilot Program Report 1987-88** or the comprehensive study conducted by EPIE.

Develop criteria for evaluation and selection. These criteria should include information such as the match with district curriculum objectives, quality of program content, organization, presentation and management/reporting system; evidence of effectiveness (based on objective research findings); system costs (both initial and continuing costs); and so on.

Request demonstrations/presentations of each of the systems. If possible, arrange for at least some committee members to visit schools using the system in the target grade levels and subject areas.

Ask the vendor to provide the names of other districts that are using the system and ask for references. The vendor will, no doubt, give you the names of schools that are enthusiastic about their product. Talking to staff in these schools is useful, but it is sometimes more helpful to ask around for other schools and districts using the system who may not be so positive.

When you talk to other users, be sure they have utilized the system for at least two years. Typically, during the first year the school staff is so excited about having a new computer system that they are not fully objective about its strengths and weaknesses. After a couple of years, they are able to see more clearly how well it supports the curriculum.

Request information on the curriculum match between the integrated learning system and district objectives. Some vendors will provide an analysis of the match between the system and the

district curriculum objectives or state-mandated competencies.

If needed, the district can also perform its own analysis by comparing the integrated learning system scope and sequence against district objectives for the specific subject area. Some vendors will also provide a comparison of the system's curriculum with major standardized achievement test content.

Review the instructional management system. The student progress reports are often the only link between the integrated instructional system and the classroom teacher. While most of the current systems have extensive reporting procedures, the reports may differ in readability and in the usefulness of the information. Some of the report features that are important include:

* indications of student progress in a form easily understood by teachers
* relative strength and weaknesses in the subject areas in which students are using the system
* progress in skills mastered.

Check the categories of information provided to determine how useful they may be in satisfying the state or district competency mastery reporting requirements.

Also check to see if there are any limitations as to when the teacher or laboratory manager can generate the reports. In some systems, for example, it is not possible to generate the reports while students are working on the system.

Evaluate the courseware for the quality of content, the instructional approach used, and the kind of interaction with the computer. A master teacher in the content areas and a district computer specialist familiar with state-of-the-art education software should both spend some time assessing the quality of the instructional sequences, graphics, kinds of responses required of students, and the systems's handling of student error responses.

Identify what staff development and technical support will be provided by the vendor. Some important questions to ask are:

* Is training provided in the price or will there be an additional charge?
* If so, what kind of training services will be provided and for how long?
* Will the vendor provide assistance in integrating the system into the district's regular curriculum?

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* What kind of ongoing support and technical assistance will be provided to the district after acquisition of the system?

Identify who will use the integrated instructional system. Will it be made available to everyone on an equal time basis or will it be focused on use by certain critical groups? The district has the choice of dispersing the systems equally to all schools or to target certain schools for greater impact. Failure to distribute equally can raise concerns by parents that their child is deprived of this technological resource.

On the other hand, equal access, if it is a limited resource, may mean that the integrated instructional system will have negligible benefits. We found that there was little benefit to students who received fewer than 20 minutes a day on the system.

The purchase of an integrated instructional system requires a significant commitment of district resources. Administrators and teachers must, therefore, be certain that the instructional benefits will outweigh the costs. The selection should be made with great care. Following the procedures outlined will help to ensure that the district will make this major investment wisely.

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How Do You Like Them Apples?

NEW MACS FOR THE CLASSROOM

"Coexistence" is Apple Computer's new strategy in the education marketplace with its recent announcement of three new low-cost Macintosh computers.

To the big question--can schools still use their large libraries of Apple II software with the new Macs?--the answer is a qualified yes; it is an option on what will undoubtedly be the most popular school model, the Macintosh LC. Furthermore, the new Macs and Apple IIs can work together on a network, share files, and use the same printers, disk drives, and peripherals, according to Apple spokesperson John Cook.

Available in January, the Macintosh LC, a low-cost color system priced under $2000 (all prices given are with the education discount), will run almost all of the 10,000 software programs compatible with the Apple IIe, if it is equipped with a special accessory card that will cost schools around $100. Apple sees the card as "an important bridge for those customers who want to move to Macintosh but wish to protect an investment in Apple II software."

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The LC is built around the 16-megahertz 68020 Motorola microprocessor, and offers two megabytes of system memory, a 40 megabyte internal hard disk drive, and a 1.44 megabyte floppy disk drive called SuperDrive, which allows users to exchange data files between Mac, OS/2, MS/DOS and Apple II ProDOS systems. A monitor, mouse, keyboard, microphone, and HyperCard are included in the under-$2000 price to schools. The LC can also be configured with two floppy disk drives instead of a hard drive, at a price of under $1600.

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NEW MACS FOR THE CLASSROOM...

Designed to be easily customizable, the LC includes built-in AppleTalk networking, and allows customers to connect easily to CD-ROM drives, external hard disks, and scanners.

A second new model, the Macintosh Classic, has the features of a Macintosh SE and is available now. Priced under $800, it uses the Motorola 68000 microprocessor and is equipped with Super-Drive, which enables it to read Apple II and MS/DOS files. The Classic does not support color, however, and does not run Apple II software.

Positioned as a "starter computer" for the person who has not owned one before, it is expected to have a role in school writing labs. "It is an option for schools where price is an important factor and color is not a necessity," says Cook.

The third new contender, Macintosh IIsi, priced under $3000, is primarily aimed at higher education, but may find a niche in the el-hi marketplace as a teachers' workstation and with integrated learning systems. A high performance computer and the least expensive of the Mac II line, it offers many expansion and video options and is five times faster than the Classic.

An innovative feature of the LC and IIsi is the use of sound. These computers come with microphones that allow customers to record and store voice messages in documents. Users can play back the recorded sound stored in word-processing documents, spreadsheets, databases and electronic-mail messages. The company expects that sound will become a common element of personal computing. Apple is providing a new version of system software that standardizes the way developers implement sound, making it an intuitive and simple process to use.

Apple expects that schools will buy any combination of the three new computers and use them along with the Apple IIs they already own, says Cook.

LOW PRICE WILL AID ACCEPTANCE

These new Macintoshes are Apple's answer to concerns voiced by educators in the past year as they became increasingly aware that the popular Apple II technology, the standard in the majority of schools, was becoming outdated.

The Macintosh has been noted for its ease of use and sophisticated graphics, but because of the high cost of Macintoshes up until now, many schools had been reluctant to invest in them. Computer brands other than Apple were beginning to look more attractive, especially IBM, for which new, user-friendly Windows 3.0 software became available in the past year. Also, IBM began more aggressive marketing to schools. With these new Macs, however, the entry price to Macintosh computing has been reduced by about 50%.

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Developers Gear Up

MAC PROGRAMS READY

What do the software publishers have in mind for the Macintosh?

Tom Snyder Productions is assuming that the Macintosh will make significant inroads into schools, and the company is making a definite commitment to the Mac, according to company spokesman Dr. David Dockterman.

Dockterman believes the best quality of the new Macs is that they are easier to network around the school, so TSP will take advantage of that capability in its future development plans. The new Macs are so open-ended and exploratory, he says, that they can challenge the structure of a classroom experience. They will entice kids to explore, but at the same time they must be harnessed when teachers have a definite agenda or curriculum.

Apple IIs are still TSP's biggest market, he says, and TSP intends to keep producing for them. "In fact, we are developing for three platforms. The use of MS-DOS systems in schools has increased recently through labs and ILS systems, so we will want to support that platform as well."

SCHOLASTIC, JOSTENS ANNOUNCE PLANS

Scholastic has announced more than 20 educational programs for the Mac this school year. Some are Mac versions of current bestselling programs, but Scholastic has been developing series specifically for the Mac, for example, its Interactive Nova: Animal Pathfinders series, a videodisk-based program that links full-motion video and slides to a database of text and graphic cards. Based on the award-winning science television series NOVA, it is designed for students in grades 5 to 12.

Broderbund will add enhancements for the Mac to its programs, but will continue to develop the same programs for all formats, rather than specifically for the Mac, according to Angela Gyetvan, Educational Marketing Manager. For example, for their award-winning The Playroom they will be adding a "sound-in" feature to take advantage of the Mac's sound capacity.

Jostens Learning Corporation has announced major courseware developments that will take advantage of both the Mac LC and the Mac IIsi, and at the same time allow schools to utilize their existing Apple IIgs hardware. Among their new products are what they are billing as a "revolutionary" networked instructional management system and a new primary language arts program.

So far most software developers seem to agree with other industry observers: with its low price and high performance, the Mac is going to make it in the schools.

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Research and Reports

A MONTHLY ROUNDUP

Does Writing to Read work? Evidence appears to be accumulating that IBM's expensive, computer-based reading program for kindergarten and first-grade students--now installed in some 7,000 schools around the country--does no more than dozens of other programs that cost a fraction of the price.

"The most optimistic reading of the research would say that Writing to Read is an expensive means of moderately improving the reading achievement of kindergarten children, with no known long-term impacts. A less optimistic reading questions even the kindergarten effects," concludes Robert E. Slavin of Johns Hopkins University after reviewing every evaluation report he could locate. "Schools might be justified in choosing the program as a means of introducing creative writing in their kindergarten and first grade, but there are certainly less expensive and elaborate ways of doing this," he writes.

Professor Slavin's article will appear in an upcoming issue of Phi Delta Kappan. For additional research and literature about Writing to Read, readers are referred to "Corporate Approach to the 2 Rs: A Critique of IBM's Writing to Read," by Kathy A. Krendl and Russell B. Williams, Educational Leadership, March 1990. That issue also presents IBM's answers to critics.

* * * * *

Here's the scoop from the fourth annual survey of technology coordinators in school districts, from Quality Education Data:

* 43% of responding districts currently use interactive videodisks, with science being the most common subject area;

* 80% own more than 100 computers;

* 67% utilize computer networking;

* 28% now have integrated learning systems, a 5% increase from last year, with Jostens the most popular brand;

* 39% use CD-ROM, but this is not expected to increase in the next year; and

* 82% take advantage of cable programs for instruction, with the most popular channels being CNN and PBS.

* * * * *

Accomplished Teachers: Integrating Computers in Classroom Practice, a report from the Bank Street Center for Technology in Education, surveyed teachers who are accomplished at integrating

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computers into their teaching. These are the factors that have contributed to their achievement:

* the teachers' motivation and commitment to their students' learning and to their own development as teachers;

* the support and collegiality they experience in their schools and districts; and

* access to sufficient quantities of technology.

"These factors act in combination and over the long term enable teachers to develop their expertise to use the technology in new ways. The teachers' willingness to learn and change appears to be a critical element in this process," according to the report. These teachers report impressive changes in their teaching practice as a result of computer usage.

* * * * *

VCR Panic? Aid on Way

NEW PRODUCTS FOR PROGRAMMING DUE SOON

More educators than would care to admit it are among the estimated 50% of VCR owners who can't program their machines. Those who need to record a program but cannot figure what minuscule buttons to press or in what sequence to press them, can now take heart. Electronics companies are hastening to the rescue.

Gemstar Development Corp. has come up with the VCR Plus, a $60 remote control that makes programming quick and easy. Instead of setting the time, date, channel, you merely enter a five-digit code like a ZIP code that will be assigned to each television program.

The codes will be published in the TV listings in major newspapers and TV Guide. The user merely punches in the code, and at the designated time the device sends a signal to the VCR to start recording. VCR Plus will be distributed to retailers this month.

Come spring, a voice-programmable VCR will be launched by Matsushita Electric in Japan. It comes with a remote-control unit resembling a portable telephone handset, which, as your own little VCR buddy, will actually ask you for recording data by electronic speech synthesis. Your answer is confirmed on a tiny screen.

One minor drawback: so far it can understand only Japanese. So get out your tourist phrase books. No word yet on when an American speaking model will be available.

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Copyright Rules for VCR Use

HOW TO STAY WITHIN THE LAW

An informal survey of classroom teachers indicates that most of them realize that copyright law applies to their taping a television program for use in the classroom. Most believe that their schools have a policy on the subject, but they are uncertain of what it is.

Producers do take these rules seriously, and schools ought to have clear policies on the matter. Here are the some of the Copyright Office Fair Use Guidelines for educational settings:

Broadcast television:
Programs may be recorded off the air for use in the classroom, but they must be used within a ten day period after the broadcast and may not be used more than once. The tape may be kept for an additional 35 days for evaluation purposes only, then it must be erased.

Programs must be used in an educational setting and may not be shown for entertainment or recreation. No fee may be charged for their use, even if the cause is worthy, such as a fundraiser for the library.

Cable television:
The above guidelines do not apply to cable television. To show a program recorded from a cable channel, you must have permission from the copyright holder, unless special arrangements apply, such as the Discovery Channel's offer of free taping rights or CNN's free classroom news programs.

Public Television:
The same restrictions apply as for broadcast television. For instructional television programs (ITV), which are generally broadcast on PBS, different rules apply in different systems, so check with your local provider. Generally, the license to use the tapes extends for one school year, and the tapes may be duplicated.

Video rentals:
These may be used in schools, but only in a face-to-face teaching situation. They cannot be used for entertainment, nor can a fee be charged for their use. Video rentals cannot be used on closed circuit systems unless a license is obtained.

Penalties for copyright infringement can range from $250 to $10,000 per occurrence. More information is available in Copyright: Staying Within the Law: A Resource Guide for Educators ($7.50, check or money order only--no purchase orders) from PBS Elementary/Secondary Service, 1320 Braddock Place, Alexandria, VA 22314.

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Impressions Censorship Builds

TEXTBOOK OPPONENTS ARE WELL-ORGANIZED

Organized opposition to the **Impressions** reading series, spearheaded by right-wing religious groups, is being felt around the country.

In the wake of over 200 calls to Georgia school officials to protest the adoption of the series, the Georgia textbook advisory committee recommended rejecting the books, saying the decision was based on educational concerns, not on the content of the series. The state board, which usually accepts the advisory committee's recommendations, will come to a final decision about the series this month. The textbook advisory panel recommended 17 of the 21 series up for adoption.

"We find it hard to turn away from the conclusion that the controversy had a major impact," says Anson Franklin, a vice president at Harcourt Brace Jovanovich, Inc., publisher of the series.

In New Mexico, nearly 300 people appeared at a state textbook subcommittee hearing to testify against the series in a meeting that lasted six hours. Nonetheless, the New Mexico Board of Education voted 12-2 to add the series to the state's textbooks list, though they advise individual schools to look at it very carefully before adopting it.

In North Carolina, the state textbook committee turned down the **Impressions** series, saying that they did so for reasons of quality and that no significant campaign against the series was launched in that state. The series is up for state adoption this month in Oklahoma and Mississippi.

The **Impressions** series, a literature-based or whole-language approach to language arts, has become the most controversial textbook program in the country (see EPIEgram, Volume 17, No. 1), though until now opposition to it was primarily in California, Washington state, and Idaho. Its opponents contend it promotes witchcraft and undermines traditional American values.

PUBLISHER DENIES 'WITCHCRAFT' CHARGES

The publisher has characterized these concerns as "totally without merit." Only 22 of the 822 selections in the series have any reference to witches or ghosts or goblins, and those are part of traditional folklore and fairy tales, says Harcourt Brace.
In a recently released statement, the publisher cites a list of nearly twelve pages of awards that authors or selections in the series have received, which include every major honor accorded children's books.

The Georgia textbook committee members were unprepared for the

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PUBLISHER DENIES WITCHCRAFT CHARGES...

opposition that turned up at the hearing, according to an article in the Atlanta Journal and Constitution:

"When the textbook committee met, the fundamentalists were on hand to confront members with point-by-point objections, leading the committee through a litany of 'objectionable' passages. Never mind that such classics as "Hansel and Gretel," or "Tales of Sleepy Hollow," or "The Wizard of Oz" couldn't pass muster under the objections they raised; the fundamentalists carried the day...," according to Editor Durwood McAlister.

"In the absence of countering arguments, it is not surprising that committee members found themselves zeroing in on the objections raised by representatives of the public who were present."

THE RELIGIOUS RIGHT: STRATEGY AND TACTICS

There's no doubt that the opposition to the **Impressions** series is very well organized.

The Christian Educators' Association International (CEAI), a group based in Pasadena, CA, will send out a large package of literature when inquiries are made about **Impressions**. Besides providing an itemization of what they consider offending passages and selections in the series, the CEAI also offers guidance on how to organize a community to protest textbooks.

"We have resisted the urge to put out a list of undesirable books because...the list would be long; in fact, it would be as large as a city telephone directory," according to a CEAI flyer.

Nonetheless, they recommend that to protest textbooks, the individual should not get involved in trying to eliminate books that have already been selected. It is far more effective, they suggest, to get involved prior to the time that the books are decided on for purchasing. Educators' professional pride demands that they support the books that already have been selected. "It would be a bad reflection on their professional ability to have a book removed, so you must leave them an out."

In other words, the group acknowledges the difficulties of removing already-adopted books from schools; they encourage working to keep targeted books out in the first place.

To win the school battles, the flyer further explains, protesters must win them in the background prior to any public meeting. They suggest convincing school board members or administrators who can quietly act in the background to remove objectionable books. The aim is to accomplish the book's removal without "fanfare."

Another publication distributed by the CEAI is a newsletter

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called Citizen, reportedly the guidebook used by the Georgia parents who organized against the series.

In an article headlined "Nightmarish Textbooks Await Your Kids," the writer takes passages from the textbooks out of context or misrepresents them, then claims the textbooks emphasize the themes of despair, mutilation, occultism, and witchcraft. For example, a humorous poem by distinguished children's book writer Jack Prelutsky about a bug crawling on a child's head, accompanied by a humorous drawing of a "monster" on a child's head, is presented as an example of morbid and horrifying literature.

The publication also presents a section called "How to Argue Your Case," which lists arguments school officials might use to counteract opposition to Impressions and tells how to answer back.

For instance, if educators tell the objecting individuals that they are acting as censors, they should respond: "It's not a matter of censorship; it's a matter of selection. If selection is censorship, then school districts would be censoring all the books they didn't buy."

Those opposing the series are urged by the publication to document their concerns in writing. They are told to seek out curriculum experts, teachers, child psychologists and others who share their views, to prepare testimony, and to take thorough notes at all meetings.

This literature from the CEAI gives a lot of direction to the opponents of **Impressions**. Schools that wish to counter the attempts of the religious right to determine what children will read had better get prepared to fight back.

WHAT TO DO

If you need help in defending the **Impressions** series, assistance is available from several sources.

* People for the American Way, a constitutional liberties group, offers a video, Redondo Beach: A Stand Against Censorship, documenting one district's response to the series. They also have available **Impressions** background information. If you phone the organization, they will put you in touch with school officials who have successfully combated these efforts in their own school or district. People for the American Way, 2000 M Street, N.W., Suite 400, Washington, D.C. 20036, 202 467-4999.

* The publisher urges schools to get in touch with their local Harcourt Brace representative, who can provide assistance and materials. Among the materials are quotes from textbook committee evaluations of the series and a listing of awards the selections and authors have received.

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WHAT TO DO...

* Ask the Christian Educators Association to send you their **Impressions** material. They cite many specific passages and selections. If you know in advance what they consider offensive, you can be prepared to put it in an appropriate context when you meet with protesters.

Textbook Prices Going Up

SALES HAVE BEEN DOWN

Textbook prices will increase 6% a year on a compound annual rate over the next five years, according to the Fourth Annual Communications Industry Forecast. While that may appear to be a large increase, it in fact is considerably less than the price increase of textbooks in the last five years--10.5% a year on a compound annual rate.

Total el-hi spending on textbooks is projected to reach $2.6 billion by 1994. El-hi spending is effected by two principal factors: school enrollment and school budgets. While school enrollment is expected to increase, "financial difficulties at the state and local level will continue to limit book spending increases," according to the report. Unit sales of el-hi books have declined for the last five years.

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Joanne Dolinar and Earl L. Fultz, Publishers

Ken Komoski, Executive Director, EPIE Institute

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Evolution Update

VICTORY FOR SCIENCE

A victory for proponents of teaching evolution in schools was won on a major battleground of the evolution vs. creationism debate: the state of Texas.

The Texas Board of Education, which adopts books on a statewide basis, voted last month to choose 11 textbooks in science and biology, all of which emphasize the theory of evolution as the central fact of modern biological science. The texts avoid discussing supernatural explanations for the origin of life.

The Texas adoption didn't just happen, says Michael Hudson of People for the American Way, a civil liberties group of some 300,000 members. It was a result of a closely targeted campaign over the last four to five years. "We engaged in an intensive effort to be sure the guidelines in Texas included evolution. We lobbied textbook publishers for a full treatment of the subject, and they responded by bringing out some very good texts."

In the past, because of the influence of the religious right on the adoption process in Texas, every science and biology textbook was required to state that evolution is "theoretical rather than factual," and that it is "only one of several explanations of the origins of humankind."

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Because of the vast amounts of money at stake for publishers striving to get on the Texas adoption list, its requirements tended to influence the treatment of evolution in all textbooks.

The next major engagement in the evolution vs. creationism conflict is expected in California, where the statewide adoption of new science books is slated for 1991. The state committee drew up guidelines last fall, making some last-minute concessions, termed "minor" by school

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EVOLUTION UPDATE . . .

officials, to evangelical Christians who advocated inclusion of the Biblical story of creation.

The Texas decision is part of a trend begun in the mid-eighties to put evolution back into the curriculum in an uncompromising way. People for the American Way, which recently released a report on the treatment of evolution in science and biology textbooks, reported an amazing improvement in how the subject is covered in texts. "The contrast with our findings five years ago could not be more dramatic," says the report.

In a related development, a Chicago court last month ruled that a junior high school social studies teacher may not teach creationism in his classroom. The teacher claimed that the New Lenox, IL, school district violated his First Amendment right to freedom of speech by barring him from teaching the Biblical story of the origin of life in his classroom. He said that he taught creationism as a way to encourage students to explore alternative viewpoints about the origin of life.

Because of previous court decisions holding that teaching creationism constitutes religious advocacy, the court upheld the district's right to prohibit teaching it. "The school board has successfully navigated the narrow channel between impairing intellectual inquiry and propagating a religious creed," wrote the court.

Incompatible Relationships?

DEALING WITH PUBLISHERS' REPS

by Charlotte Danielson

A curriculum committee can be under considerable pressure from publishers during the period that it is studying, evaluating, and choosing textbook materials. The source of the pressure is not hard to find: any textbook adoption, even for a small school system, is a big sale for a publisher, and a publisher's representative who does not do his best to make the sale will soon find himself out of a job.

Furthermore, any publishing company that does not allow its representatives substantial expense accounts and other kinds of practical help will soon be outdistanced by the competition.

It is important for curriculum committees to remember this aspect of textbook selection: all publishers commission, print, and distribute the very best materials they can find anywhere to help children learn, and many of their products are excellent; but at the point where publishers meet selection committees, the publishers are engaged primarily in salesmanship. Their <u>first</u>

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interest at this stage is selling their product.

The first interest of the curriculum committee, on the other hand, is to find the single set of materials that best embodies the goals and criteria the committee has chosen for its schools. These two interests, both reasonable, are nonetheless different. And curriculum committees must work hard to keep their own purpose firmly in mind as they conduct their search; they must make a conscious effort to remain detached from the selling efforts of the publishers as they examine the publishers' textbooks.

Publishers and their sales representatives tend to use much the same techniques for selling that committee members have become accustomed to in other areas of life. Especially when products of different manufacturers are similar to each other, as textbook materials often are, the manufacturers usually try to distinguish their products from others by distinctive and appealing packaging, by including extras (such as tote boxes and resource binders), by sending out attractive and articulate salespeople, and by presenting the product with precisely the right combination of the new and the familiar.

TEACHERS GET SEDUCTIVE OFFERS

Curriculum committees can expect other approaches, too, both indirect and direct. For example, a major publisher may invite the reading committee to a conference or seminar on reading, where they will hear scholars discuss the most recent research findings on how children learn to read, and meet the authors of the publisher's reading series.

This can be a particularly seductive offer, because it is flattering to the committee, and because committee members might learn valuable information; the publisher is taking the members and their mission seriously and meeting them on their ground.

In a more frivolous vein, publishers' representative take school people to lunch and dinner, they organize evening presentations with elaborate refreshments, and the routinely establish hospitality suites at major conferences.

Most publishers' representatives will try to get in touch individually with members of a selection committee, will drop into their classrooms, and will invite them to presentations. All these activities are common when a person is trying to sell something, and many of them have been effective in causing members of a curriculum committee to suspend judgment, at least partially, when they are examining materials.

The best way to handle publishers' sales efforts is to avoid them as much as possible. When such efforts cannot be avoided altogether, a committee must be scrupulously fair to all representa-

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tives. There is no need, in a well-designed text-selection process, for publishers' representatives to be in direct contact with committee members at all, and a sensible precaution is to adopt a policy of no presentations, no seminars, and no social occasions whatever. It's true that some seminars might increase members' knowledge about an aspect of their subject, but it's important to remember that such a seminar is in truth a disguised sales pitch.

Also, since it would not be fair to attend a presentation by one publisher without giving all the other contenders an equal chance, it is unwise to open that door at all. It is best to delegate all direct contact with publishers to the committee coordinator.

The only exception to the no-presentation rule might be in connection with a program in which the textbook is relatively unimportant and other elements are essential, such as in an activity-based science program for elementary schools. If a committee is seriously considering this kind of program, a mini-workshop conducted by the publisher for the committee members, to show them specifically what would be required of the teachers in this program, would be helpful.

HANDLING IN-SERVICE NEGOTIATIONS

Many publishers and their representatives are honestly committed to the improvement of student learning and believe that well-designed materials can provide valuable assistance for teachers in their work. In addition, many publishers' representatives believe that their job extends to the provision of in-service for teachers in both the use of the adopted materials and more generally in the subject.

Thus, a publisher might offer, as part of its negotiations with a district regarding the adoption of an elementary mathematics program, five days of in-service training, with consultants paid for by the company. This in-service can be very valuable to a school district and is always welcomed. However, discussions and negotiations regarding it should take place after, rather than before, the adoption.

In summary, the quality of the textbook or textbook series should be the criterion for whether it is adopted; if the publisher's representative becomes part of the adoption process, the committee's objectivity may be compromised.

(Excerpted from The Manual of Textbook Adoption by Charlotte Danielson, published by Outcomes Associates, P. O. Box 7285, Princeton, NJ 08543-7285.)

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Waving the Magic Wand

BIOLOGY TEXT INTEGRATES VIDEODISC IMAGES

Wedding text with technology, D.C. Heath's Biology 1991 offers videodisc barcode capability in the teachers' edition, which means that teachers can, with the wave of a wand, integrate thousands of still and moving images into textbook-based classroom instruction.

Teachers will have on-page barcode correlations to a visual biology database that includes over 2500 still images, 150 diagrams, and 163 movie clips. When the teacher runs a pen-shaped scanner over the barcode, the image instantly appears on the videodisc player. The user does not have to bother with command buttons on the videodisc player. Because of its ease of use, such a barcode system is particularly well-suited to those teachers who are not comfortable with technology.

The visual database for the textbook is drawn from Optical Data Corporation's The Living Textbook, an interactive multimedia library for secondary life-science study. Optical Data's interactive software is available for the Apple IIgs or the Macintosh.

Research and Reports

A MONTHLY COLUMN

Students enjoy using computers--and this is true from preschool through college, among males and females, and for mainstream and learning disabled students. For many students, computer-based instruction is more motivating than traditional instruction.

These are some of the findings of a Report on the Effectiveness of Microcomputers in the Schools from the Software Publishers Association.

Computers are motivating, says the report, because students

* enjoy being actively engaged and able to make mistakes without embarrassment;
* prefer immediate, helpful feedback;
* enjoy graphics and game formats;
* like the feeling of being in control.

* * * * *

The International Society for Technology in Education (ISTE) anticipates an abundance of equipment in schools of the future.

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RESEARCH AND REPORTS . . .

Among their recommendations in a recent report are a student computer ratio of 5:1 by 1995, with every classroom equipped with large screen displays, CD-ROM, videodisc technology, as well as telephones and modems. Teachers should have a computer on their desks both at school and at home, with multimedia capabilities including camcorders and desktop publishing software.

Schools must also face up to the fact that they must plan their technology funding on a replacement cycle of no more than five to six years. It is not possible to make use of many technological advances without up-to-date computers. "Newer machines provide access to learning environments not reachable with the earlier low-performance machines," says the report.

Who will pay for this? ISTE proposes a National Educational Technology Trust Fund similar to the National Highway Trust Fund.

* * * * *

The U.S. Department of Education spends $287 million or 1.25 percent of its budget on research; Xerox Corporation last year spent $794 million or 7 percent of its revenues on research and development, according to the New York Times.

* * * * *

The National Endowment for the Humanities in a report on education called Tyrannical Machines by Lynne Cheney advocates the development of "the parallel school," a term used to mean cultural activities intended for the public.

The multiple offshoots of this fall's highly-acclaimed television program, "The Civil War," are cited as the the parallel school ideal in action. Among the educational activities that have evolved from the widely-viewed series are

* related classroom material available for free, underwritten by General Motors;

* a college telecourse licensed by PBS;

* an interactive video that enables students to call up original Civil War diaries, journals, letters, and photographs and have access to commentary by leading historians;

* lectures and battlefield tours organized by the presenting station in connection with the film; and

* a reading, viewing, and discussion project in connection with the series in libraries nationwide, sponsored by the American Library Association.

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RESEARCH AND REPORTS . . .

"The parallel school serves as a model for how education can thrive when it is characterized by a diversity of opportunities and by audiences who can choose freely among them," says the report.

* * * * *

Evaluating Software

GUIDELINES FOR TEACHERS

Some 11,000 educational software programs are now on the market. Only a small percentage of these programs can be considered educationally sound, according to Mark Sherry, who has evaluated software for EPIE for many years. One of the biggest problems EPIE hears about from its readers and customers is the need for evaluative information about educational software.

While there are differing opinions about what constitutes effective software, teachers who must evaluate software on their own need to have criteria for judging it. Over the years, EPIE has appraised thousands of programs, both stand-alone and integrated learning system software. Below are listed what EPIE believes are the qualities of sound educational software, along with instructions and questions for the teacher who is testing it. Remember that probably no software will possess all these attributes, says Sherry, so teachers should decide which are the most important and make the selection accordingly.

Appropriateness:

Assess the age or grade appropriateness of the instructional approach, the methods used to motivate students, the tone of address, and the user interface. Is the program suitable given the typical attention span of the target population? Are multiple difficulty levels provided where appropriate? Is sufficient practice provided for students? Is enough information presented via tutorial frames and feedback help so that students are likely to succeed?

Clearly-Stated Objectives:

The learning objectives should be stated in the documentation or the program itself. Does the program's objectives match curriculum objectives?

Clarity:

Analyze the clarity of the tutorial sequences, examples and demonstrations, procedural prompts and directions, and frame format and user interface. Are tutorials provided if needed? Are definitions given for new and difficult terms?

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EVALUTING SOFTWARE . . .

Content Accuracy:

Note any errors of fact, grammar, spelling, and usage. Do errors represent a few minor flaws in an otherwise error-free program or are they indicative of error-ridden software?

Creativity:

Is the software open-ended? Does it challenge or stimulate students to make decisions and think creatively?

Good Documentation and Support Materials:

Examine the organization of the documentation. Does the documentation strike a balance between thoroughness and conciseness? Are prerequisite skills addressed? Are procedural instructions clear? Are suggestions for integrating the program with classroom instruction provided?

Feedback:

Be aware of the kind of feedback that is used. Right/Wrong feedback tells the student only if he or she is right or wrong, and is the least desirable feedback. Corrective feedback informs the student if he or she is right or wrong and also provides the correct answer. Explanatory feedback apprises the student whether he or she is right or wrong, provides the correct answer and a brief explanation of why the student's response was incorrect, or why the correct answer is correct. Remedial feedback gives the students additional information and/or another approach to understanding the material. Error-Specific feedback furnishes an appropriate message specifically for every possible incorrect student response.

Are graphics and audio effectively used as feedback where appropriate? Is feedback in any way inappropriate or inconsistent, or especially helpful or supportive?

Motivating Graphics and Audio:

Graphics and audio should be an integral part of instruction, used to motivate and to focus attention. Determine the technical quality of the graphics. Assess the clarity of audio, especially computerized speech, and note if it is adjustable.

Learner Control:

Be aware of aspects of the learning environment that are within the learners's control, such as sequence of instruction, pacing, ability to exit and return, hint or help options, procedural instructions, ability to review previous frames of text, and other options. The more learner control the better. Note in-

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stances in which control is inappropriately taken away from the learner.

Appropriate Questioning Strategies:

Diagnose the sequence and variety of question types. The question sequence should lead to appropriate thinking strategies, including higher order ones. Is the strategy likely to motivate students to keep interacting with the lesson? Is the student given a sufficient number of tries and are missed items recycled?

Effective Response Judging:

Are all responses that should be considered correct accepted as correct by the program? Are different kinds of errors judged differently? Are attempts to skip an item interpreted as wrong?

Good Technical Quality and Printing

Are there any obvious programming bugs or other problems of a technical nature, such as overly long waiting times? Is it easy to print student work when this is an option?

Asking these questions and looking for these characteristics will provide teachers with objective, in-depth critiques of software they are considering.

Software Industry Trends

EPIE RESEARCHERS NOTE CHANGES

EPIE Institute is updating The Educational Software Selector (TESS) database, the largest compilation of information on educational software in existence.

Robert Haven, who directs the operation for EPIE, offers these observations on trends in the educational software business.

* Educational software continues to be published at a substantial rate, about 200 new programs a month.

* Smaller, older companies are consolidating; at the same time, many new companies are being formed.

* Amiga is getting continuing support and a reasonable number of programs now exist for it.

* An increasing amount of videodisc-related software is available. Hypercard appears to have become widely accepted as a way of retrieving images stored on videodisc.

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SOFTWARE INDUSTRY TRENDS . . .

* While there are many new programs for the Macintosh, most are at the high school level or above.

Publication plans for the 1991 version of TESS will be announced next month.

Scholastic Initiates Software Club

PROGRAMS AVAILABLE FOR HOME/SCHOOL USE

Long known for its successful school book club operations, Scholastic, Inc. has launched an in-school software club for students in grades four to nine and their families.

With discounts of 20% to 50% off retail, prices will begin at about $13.95, with the average cost around $23. About half the programs will be from Scholastic's own publications and the remainder will be from other publishers. According to Scholastic, besides programs that support the curriculum, there will be programs for entertainment and a wide range of home-based computer uses. Among the first titles offered are Slide Shop, The Newsroom, The Bank Street Prewriter, and the Sesame Street Learning Library.

Club members will receive offerings three times during this school year which will include order kits with teacher guide and take-home order brochures. For teachers who participate, a range of bonus options will be offered to help build school software libraries.

Scholastic reports that its book clubs are in 80 percent of the schools in the country.

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The Newsletter About Educational Materials and Technology

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School of the Future?

Education Utility Is Coming

The Education Utility, a satellite-based, integrated technology system that has the ability to deliver massive amounts of instructional resources to the desks of students, teachers, and community users, has begun limited operations in five states.

Representing nine years and $10 million of development, the Educaton Utility is one of the most ambitious and visionary systems devised to revolutionize learning through technology. The Utility is now in place in schools and demonstration sites in Arizona, Utah, Florida, New York, and California.

The Education Utility, in its fully-developed form, will deliver by satellite virtually unlimited amounts of educational resources—including software programs, databases, optical disk programs, live satellite transmission, communication services, productivity tools, full-motion interactive video, and television.

Most important, it integrates educational technologies and materials into one open, user-friendly system with sophisticated administrative and management tools.

Not all of the elements of the system are yet in place. Founder Jack Taub expects the complete system will be in operation within the next six months and that by the end of the year several hundred schools will be using the Utility.

The most progress in implementing the Utility has occurred in Arizona and Utah, where nine schools are using the technology. On Long Island, NY, a demonstration model is in operation at Long Island University and a regional BOCES is installing it in several school sites. Nova University in Florida has set up the Utility in an elementary school on the campus.

This advanced-technology system is called the Education Utility because it works like any other utility, such as electricity; but instead of electricity, it is information that flows into the school from a central source. Because the Utility is satellite-based, it does not rely on

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Magazines Enliven Classrooms

Help Nurture Kids' Special Interests

A flurry of activity is taking place in the world of children's magazines, and one of the results is that more magazines are finding their way into classrooms.

"Magazines can offer curricular support not available from textbooks," says Donald R. Stoll, executive director of the Educational Press Association of America. "And kids like magazines. They're motivating, usually attractively-packaged, and often more contemporary than textbooks.

Excellent magazines for children exist in almost every subject area, and they can enrich study in many ways. The literary contests in student-written publications such as *Stone Soup* and *Merlyn's Pen*, can engage students enthusiastically in writing and art activities by offering outlets for their work.

In social studies, magazines can provide a way to keep up with the rush of events in the world, such as the dramatic changes in Eastern Europe or Operation Desert Shield. Because textbooks do not yet cover these topics, teachers have to look elsewhere for materials. *Update*, a current events magazine published by Scholastic, has increased circulation by 15% in the last year because the need for supplementary material was so keenly felt in social studies classes.

In science classes, magazines can take students beyond the curriculum to explore special interests. For

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School of the Future?

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telephone lines or modems—delivery is swift and simple. And the school is metered and billed only for the information and software it actually uses.

How It Works

Here's how the system works: massive amounts of educational software and other information resources are stored at the Utility's National Coordination Center near Washington, D.C. Each school that subscribes to the Utility has a Resource Computer that holds at least two gigabytes of information and is hooked by satellite to the Utility's coordinating computer.

Information in the central computer can be called up by a teacher or school official, previewed, then accepted or rejected for the school's Resource Computer. If it's accepted, it is stored in the school's Resource Computer for as long as it is needed. The school is billed only for those hours that it is actually used by students. Up to 250 computers throughout the school can be networked to the Resource Computer.

Though the system can be configured in a variety of ways within the school, a typical arrangement might include an administration workstation, and, in each classroom, a teacher's workstation and five or six student workstations. The system can deliver to the workstations not only computer software, but also optical disk programs, CD-ROM material, television, distance learning, and any other information or service that can be digitized. The teacher's workstation would usually include a large screen display and a laser printer for reprocessing materials for which a hard copy is desired.

Additional workstations could be set up for libraries and media centers and teacher work areas. Students and parents would also be able to access the system from home, to check on assignments, to communicate with teachers, or to teach homebound students. It's conceivable that the Education Utility will be a boon for home-schoolers, who could use whatever they choose of a school's offerings.

In addition to classroom hardware and the Resource Computer, the Utility provides a satellite receiver and decoder, a satellite dish antenna, a metering computer, a community access computer, and a variety of other equipment to deliver and store the information. The system is technologically open, so that almost any kind of hardware or software can be employed. Schools may use their existing equipment or lease equipment from the Utility.

The aim of the Utility is to enable schools to maximize the usefulness of all types of learning resources, from computers to video to telecommunications, and even textbooks, allowing teachers to choose those materials that best suit the needs of individual learners and the school's curricular goals.

The entire system is operated by proprietary software called the Taub-Education Operating Environment, which facilitates the integration of hardware and software.

How Teachers Will Use It

The system will allow teachers to log on, screen all software or other material relevant to a lesson they wish to teach, preview the selections at no cost, then order whatever they want for the school's Resource Computer, and assign its use to individual students.

Exemplary lesson plans, submitted by teachers for distribution on the Utility, will be available to allow teachers to draw on one another's experience and expertise.

Teachers can also use the system to manage assignments, generate tests of the materials covered, and then capture and analyze student scores. They can evaluate the instruction and how it impacts different students, shifting students in and out of groups, if necessary. In fact, the user will be able to recreate and analyze every instructional sequence that has been delivered to any student or group.

The Education Utility is designed to integrate information needs and support services at all levels of education beginning with the individual and going up through the classroom, the school, the district, the county, and the state.

The average cost of using the system is 50 cents an hour of actual use, plus the cost of leasing the equipment after the installation. But schools may reduce their costs significantly, since any school that subscribes to the Utility may become the Utility center for the surrounding community, with homes and businesses allowed to access the system by modem, for $1.50 an hour. The school will receive 50 cents of each $1.50 paid by a community user, thus enabling the school to defray a substantial amount of its cost of using the Utility.

Some 600 resources are now available on the system, but by mid-year some 5000 programs and databases should be licensed for school and community use.

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Research and Reports

A Monthly Column

In a survey of two- and four-year colleges around the country, 61% of responding schools said that using instructional software in classes will be a very important part of their plans in the next two to three years. The survey, cosponsored by the University of Southern California and Educom, also found that ownership of personal computers among students ranges from 14% at community colleges to 29% at private universities.

How is equipment and technology actually being used in schools to support the curriculum? Answers can be found in a recent survey statewide in California on the application of educational technology. The study, which appears in the December issue of *Educational Technology*, found that 24% of language arts instruction is delivered with educational technology, which includes both computers and audiovisual media. Twenty-two percent of science instruction and 21% of social studies instruction is presented electronically.

"While it is obvious that teachers are still doing the bulk of teaching, their role is changing, and for many their skills in managing instructional technology are becoming as important as their skill in personal instructional delivery," according to authors Robert G. Main and Lily Roberts.

Other important findings:

- Over half of the teachers are rated as of limited proficiency or unskilled with computers for both personal productivity and instructional use.
- While some schools have very few technological resources and other schools are using technology extensively, the average California school spends a total of $23,237 each year on educational technology or about $675 per classroom.
- A total of $10,247,376 was spent throughout the state on educational technology. (During fiscal year 1987-88, school districts in California spent $88.8 million on textbooks).
- Department chairs and individual teachers exercise the most influence in assisting the principal in making decisions about educational technology applications and purchases.
- The major obstacle to increasing the use of education technology is the lack of funds, a problem for two out of three schools
- Laser disk players and CD-ROM are just beginning to be used, with one out of three schools having them.

The efficacy of comprehensive, computer-based instruction for basic skills remediation with disadvantaged students was the subject of a recent study in

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School of the Future?

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P. Kenneth Komoski, Director of the EPIE Institue, a database provider for the Education Utility, said that because of the metering and monitoring of product use, there is immediate feedback on how well learners respond to educational resources.

"There is a kind of built-in 'Nielsen rating,'" he said. "But, unlike the TV rating system, good products will finally have a real chance of driving out poor products as teachers and students choose to use those products that are more effective. It's the first opportunity that educators have had to close the effectiveness loop in how they spend money on instructional material." EPIE is providing a database of information on educational products and curriculum to the Utility.

Taub has said that he aims to turn every student's desk into an "intellectual Disneyland." Given the chance to go to a movie or go to school, Taub believes that students, when they have access to the Utility, will choose school.

As installations of the Utility proceed over the next year, many educators will be watching to see if he is right.

Schools wishing more information about the Education Utility may contact National Information and Education Utilities Corporation, 2041 Gallows Tree Court, Vienna, VA 22180, 703 734-7000.

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Research & Reports

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New York City, reported in the *Journal of Research on Computing in Education*.

The authors found that computer-based instruction is indeed effective with this population both in reading and mathematics. Interviews with the students indicated that four features made computer-based instruction attractive to them: it is perceived as less threatening than regular classroom instruction, it provides immediate feedback, it performs individualized diagnostics, and it provides greater academic support.

Forty-five percent of high school students surveyed by *Who's Who Among American High School Students* said they have a personal computer in their homes. Students were demographically selected for the survey and were juniors or seniors with A or B averages. But while 60.2% of male students have a computer in their home, only 39.1% of female students have one. Sixteen percent of males spend six hours or more per week on the family computer, while only four percent of girls do so.

In the same survey 80% of students believe informational TV/video programs should be shown in high schools, even if they include commercials and product endorsements.

CNN Newsroom, the free, noncommercial school television news program, now has 13,000 schools as subscribers, according to *Educational Marketer*. Whittle Communications' *Channel One*, the highly controversial school news program that brings commercials into the classroom, has contracts with close to 6000 schools.

Writers Wanted

EPIEgram welcomes articles from educators. If you wish to report research on educational materials and technology, tell of a positive or negative experience with materials or hardware, or simply offer a unique point of view on using classroom resources, we'd like to hear from you. Please send a query letter briefly describing your article.

Less than one cent out of every dollar spent to educate a student goes to textbooks, says a report from the school division of the Association of American Publishers. Of the $4800 spent on average for each pupil last year, about $41 went toward textbooks.

Schools spent over $2 billion on textbooks in 1990, according to estimates prepared by the U.S. Commerce Department. For the textbook industry as a whole, shipments were up 2.5% when adjusted for inflation, a lower rate of growth than was expected. Reasons given for the weak growth were a slowing economy and "restrained" school and library funding.

Profits were also lower than anticipated, and this is attributed to high editorial, marketing and administrative costs. Many new reading programs were published in 1990 and these traditionally incur high developmental costs.

Further gloomy news on the educational publishing front: stocks of textbooks publishers fell by more than 26% in 1990. Harcourt Brace Jovanovich suffered the most serious blow, with its stock plunging more than 80%. Industry experts attribute the decline to investors' lack of confidence that HBJ can recover from the heavy debt incurred fighting a hostile takeover a few years ago.

Children's books continued to be the fastest growing segment of the publishing industry in 1990. Sales for the year are projected to top $990 million, which is almost double the figure for 1985.

Surveys of high school seniors show a decrease in the proportion who read books, magazines or newspapers "almost every day," from 62% in 1977 to 46% in 1988. These figures are reported in the recently published *Who Reads Literature* by Nicholas Zill and Marianne Winglee.

Nonetheless, they report, U.S. high schools seem to be holding their own in teaching literature appreciation to the best students. The number of students who took the College Board's Literature Achievement Test increased by nearly 50% between 1980-1981 and 1985-86 and the mean score increased slightly. The authors point out, however, that only a small and rather select fraction of college bound students take the Literature Test.

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Magazines Enliven Classrooms

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instance, *Odyssey*, a space exploration and astronomy magazine, is crammed with features, experiments and puzzles on topics that the student will probably just barely touch on in a regular class.

Why the Boom?

The recent burst of activity in the field can be attributed to two factors. First, just as today's parents buy more books, and have caused a boom in the children's book business, so also do they buy magazines. A larger proportion of parents are well educated; they read more and they want their children to read more.

The second factor is the recognition by publishers that children are a very desirable target for advertisers. While many children's magazines do not carry advertising, some do, and it is their success that is creating interest among major publishers in the business of children's magazines.

Just two years ago, media giant Time, Inc. Magazines launched *Sports Illustrated for Kids* and circulation has skyrocketed to over 800,000 readers. The publisher offers an impressive package to advertisers, claiming that each issue is read on the average of seven times by children whose parents have an educated, upscale profile. Time, Inc. Magazines is reportedly looking to undertake more children's publications

And Time Inc. appears to recognize the importance of getting their product into the nation's classrooms. Each month they donate 250,000 copies of the magazine to "children at risk" in elementary schools nationally, along with a teachers guide prepared by the Bank Street College of Education. About 85% of teachers say that because of the magazine children read more and are more enthusiastic readers.

But some of the new magazines appear to have no redeeming educational value and are strictly entertainment, covering such topics as Barbie and Teenage Mutant Ninja Turtles.

Of the established magazines, most teachers know the large circulation publications, such as *Highlights for Children*, with a circulation of 3 million, the largest in the country, and *National Geographic World*, which has over a million readers. And Scholastic, one of the giants of school-magazine publishers, offers some thirty titles to schools, which they say sell 250 million copies annually.

Many specialized small circulation magazines also exist. They do not carry advertising and because many of them as a result have limited amounts of money for promotion, teachers are often unaware of them.

Some of the classroom favorites listed below are new, but most have been around in a low-profile way for some time. Some offer teachers' guides, classroom sets, or special discounts to schools. Others are aimed at the home subscriber, but even so many offer help to the classroom teacher.

Some Special Publications

Open Court, publisher of the well-established, acclaimed literary magazine for children, *Cricket*, this year began *Ladybug* for readers ages 2 to 7. Like its sister publication, *Ladybug* is distinguished by quality writing and outstanding art, much of it by well-known children's writers and artists. *Cricket* was originally developed for private subscribers, but Open Court is in the process of tying both magazines to their language arts textbooks program, offering classroom sets and teachers' guides. "We found that a lot of teachers were

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New Lit Mag For Teachers

To Foster Integration Of Books and Curriculum

There's also a snazzy new magazine for teachers and librarians. Designed to help them expand their use of children's books and integrate them into the curriculum, *Booklinks: Connecting Books, Libraries, and Classrooms* will provide help with using children's literature effectively as a teaching tool.

Recognizing that literature-based curricula are being instituted in schools nationwide, the magazine will provide recommended reading lists, interviews, and feature articles about literature for children from preschool to eighth grade.

The aim is to "link" new books to older titles to provide a comprehensive curriculum of a particular subject. Books will also be linked by genre, age level, period, geographic origin and other features.

Booklinks is published by The American Library Association and Booklist Publications.

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Magazines Enliven Classrooms

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using *Cricket* in the classroom on their own," said Theresa Saffey, managing editor of the publications.

A favorite of English teachers is the award winning *Merlyn's Pen: The National Magazine of Student Writing*, which publishes student writing and art. With a modest circulation of 14,000, the magazine garners praise from teachers who say students enjoy and are willing to learn from other students' work. Students in grades 7 to 10 may submit work; the magazine receives between 3,000 and 5,000 submission each year and while only 2% of manuscripts are published, every manuscript gets a personal response.

In a similar vein, the handsomely-produced *Stone Soup: The Magazine by Children*, sponsored by the Children's Art Foundation in Santa Cruz, CA, hopes to encourage younger children (up to age 13) to read, write, and draw by publishing their best work. According to editor Gerry Mandel, teachers often use it in class, especially the activity guide in each issue.

For social studies classes, three magazines from Cobblestone Publishing offer a rich array of history and culture. *Faces: The Magazine about People* presents a view of world culture to children in intermediate grades. Well-researched and attractively produced, *Faces* is published in cooperation with the American Museum of Natural History in New York. Each issue explores a theme in depth and includes artwork, maps, and activities. The December issue covers holidays around the world, including Africa, Vietnam, and Borneo, while the January issue is about South Africa.

Cobblestone is a magazine of American history for grades 5 to 9, with each issue focusing on a particular of theme: the French and Indian War, the Harlem Renaissance of the 1920 and 1930s, and Hawaii are some of its recent subjects. A sister publication, *Calliope*, has been revamped this year and covers world history from classical times to the Renaissance. About 30% of subscriptions to the three magazines are for classroom use, according to a company spokesperson. Teachers' guides are not included, but references for teachers are in the back of each issue.

A number of outstanding magazines of science exist. One of the smaller, but noteworthy ones is *Dolphin Log*, published by the Cousteau Society. Designed for children ages 7 to 15, its subject is the sea, but it aims to teach the interconnectedness of all living organisms. Admirably designed, with full-color photographs, it brings together science, history, and the arts, as they relate to the global water system.

Where to Find Help

Teachers interested in these small magazines, or in more information about any magazines for children, can find help in *Magazines for Children*, edited by Donald R. Stoll, and copublished by the Education Press Association of America and the International Reading Association.

This publication lists detailed information on some 130 magazines, including a description of the periodical, its target audience, price, and ordering address. The magazines are indexed by subject and age/grade level. Some publishers offer a free sample issues to schools. To order, write to: Educational Press Association of America, Glassboro State College, Glassboro, NJ 08028

More Copyright Info Readily Available

EPIEgram readers have indicated that they need more information on complying with the copyright law. The Association for Information Media and Equipment (AIME) offers a hotline number for educators who have a question about whether something is within copyright guidelines, or who need help in developing a copyright policy for their school or library.

AIME will also send you material explaining the copyright law as it applies to all media and samples of copyright policies of other schools. A 21-minute video on copyright law is available as well at a nominal fee.

Call 1-800-444-4203. Or write to AIME, P. O. Box 865, Elkader, IA 52043.

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P. Kenneth Komoski, Exec. Director, EPIE Institute

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State Software Consortium Debuts

To Distribute TESS Database

Educators have been at a loss to deal with the inundation of educational software products on the market. Currently some 12,000 educational software programs produced by 900 publishers are available.

Education agencies in three states have formed a consortium to meet the challenge of providing information about educational software to schools.

EPIE Institute will license its database, known as The Educational Software Selector (TESS) to members of the States' Consortium for the Improvement of Software Selection. The TESS database contains descriptive/evaluative information on virtually all educational software.

The Consortium will supply information to every educational institution within a member-state on a searchable, computerized database. Under a licensing agreement, EPIE supplies copies of the database on disk to the authorized education agency within a member-state.

The agency then copies and installs the database in schools, universities, and public libraries throughout that state. Information in the TESS database will also be provided to member states in a hardcopy directory in the spring.

Since joining the Consortium, Michigan's authorized agent, the Genessee Intermediate School District in Flint (in cooperation with the Michigan State Department of Education) has installed the TESS database in over 100 sites statewide.

In New York, the database is being installed via regional information centers within the state's network of BOCES (Boards of Cooperative Education Services). Other states now in the consortium include Georgia and Utah.

A demonstration of the database will take place atthe AECT convention in Orlando, Florida, in February. Agencies interested in attending or in receiving more information should contact Pat Lutzky at EPIE Institute, 516 728-9100.

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Learning From Television News

Research Indicates Need for Teacher Intervention

With some 20,000 schools now bringing television news into the classroom, teachers need to know how they can best facilitate learning about current events with this medium. Two recent studies about how people acquire news information can provide insights into effective ways to teach the news from television.

There is evidence that television may be less useful than either newspapers or word of mouth at conveying information to the public, write John P. Robinson and Dennis K. Davis in "Television News and the Informed Public: An Information-Processing Approach" (*Journal of Communication*).

In no case do adult viewers of television news emerge as more informed than newspaper readers, they found in a review of the literature on the subject.

The authors discovered that though people may *perceive* that they obtain most of their information from television, these perceptions do not match direct studies that examine what people actually learn.

A second study confirms and amplifies some of these findings. Television news stories do not convey much information to the viewer that is remembered, according to "Seeing is Remembering: How Visuals Contribute to Learning from TV News" by Doris A. Graber (*Journal of Communication*).

Studying the impact of visual information on remembering the news, Graber found that viewers remember more visual themes than verbal ones. Only 16% of verbal themes were spontaneously recalled by half the respondents, against 34% of visual themes. So though visual themes were better remembered than verbal, nonetheless the author describes learning from television as involving "a very high rate of information loss."

One of the reasons that television is a poor conveyer of information, Graber says, is that 70% of visual information on television consists of closeups of people.While television viewers may draw many inferences and grasp *continued on page 2*

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Where to Find TV Information

Wealth of Materials Available

Television has staked out its territory in the classroom, offering an array of programming for nearly every subject area and age level.

An abundance of materials related to television programs–teachers' guides, posters, maps, book lists, programming guides, to mention a few–is provided by the networks, the producers, and industry groups. In addition, while many educational programs grant free off-air rights to schools, many have restrictions. How does the teacher sort it all out? These are the major resources:

Cable in the Classroom. A glossy magazine introduced this month, *Cable in the Classroom* offers a *TV Guide*-like schedule arranged by subject for the month's educational programs from member cable television stations. Articles, tips, copyright information, and case studies of successful use of television in the classroom are included. Cable in the Classroom, 1900 N. Beauregard St., Suite 108, Alexandria VA 22311. Phone 703 845-1400.

KIDSNET. A clearinghouse for commercial, cable and public programming for children from preschool to high school, *KIDSNET* offers one-stop shopping: an up-to-date electronic database that can be searched by subject, toll-free telephone service to answer educators' questions, and a monthly print schedule. References to ancillary materials and copyright information are provided. *KIDSNET*, P.O. Box 65089, Washington DC 20035. Phone 202 291-1400.

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Coming Attractions

CNN Newsroom. In addition to its daily school news program, CNN offers free taping rights to all coverage of the War in the Gulf for classroom use in perpetuity. Turner Educational Services, 1 CNN Center, Atlanta, GA 30348-5366. Phone 800 344-6219.

World Classroom. Now being piloted in Boston, this new daily news program for high school students will focus on background to the news rather than breaking news. Produced in affiliation with the award winning newspaper, *The Christian Science Monitor*, the program will offer free daily copies of the newspaper to participating schools. It will be available nationally in the fall. Phone Sue Bridge at 617 787-6868.

Separate but Equal. Sidney Poitier stars as Justice Thurgood Marshall in this two-part ABC docudrama about events leading up to the Supreme Court's 1954 decision to desegregate the nations' schools. Scheduled for April 2 and 3.

Women's History Month. The Arts & Entertainment Network's celebration of Women's History Month in March will present segments on women in politics throughout the world, including Corazon Aquino, Soviet economist Tatyana Zaslavkaya and others. A&E, P. O. Box 1610, Grand Central Station, New York, NY 10163-1610.

Learning from Television News

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the emotional impact of a situation from viewing faces, these visuals do not necessarily expand their factual knowledge or in-depth understanding.

"Although the pictures shown to television audiences vastly expand knowledge of human aspects of stories, and allow audiences to form more accurate mental pictures of the world, they fail on many other fronts...much political information deals with complex concepts that defy quick visual illustration," concludes Graber.

Do these findings mean that teachers should forget about television news as a teaching tool? Not at all.

Despite its shortcomings as a conveyer of information, most students will depend on television throughout their lives as their main source of news.

"The teacher's role is indispensable in getting students introduced to television news," said John P. Robinson, Professor of Sociology at the University of Maryland and co-author of one of the studies, in a recent interview. People who lack background knowledge or the processing skills to interpret specific stories find television news especially difficult to comprehend. "Teachers can provide the framework so that students can begin to understand the news," said Robinson.

Viewers' processing difficulties are likely to be exacerbated if they do not make an active effort to learn, but instead passively accommodate to the information. The classroom is the ideal setting for getting viewers actively involved in understanding the news. "Even their parents could profit from this," said Robinson.

Furthermore, information-processing research suggests that when people discuss the news with others, they recall information that is stored in short-term memory but is not easily accessible to conscious recall. Conversation can strikingly increase the likelihood that information stored in short-term memory will eventually be integrated into long-term memory. As the number of conversations about news increases so does comprehension, the Robinson and Davis study found. Discussion, then, is important in teaching students about the current events they see on television.

Television can serve as a catalyst to interest people in other sources of information, leading viewers to search for contextual frameworks in other media. Since we know that a majority of students do not read newspapers or magazines regularly, teachers should direct students to search out print sources of information that will deepen their understanding.

Whatever its failures, television may still, under some conditions, have significant long-term consequences for visually powerful events, according to the Robinson and Davis study. Television played an important role in perceptions of the Civil Rights Movement, the Vietnam War, and is doing so in the Gulf War. And, on those infrequent occasions when an event commands almost complete public attention, people depend on television to make them eyewitnesses to history.

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Taping Tips From the VCR Savants

Get What You Want to Watch the Way You Want It

by Jeff DeTray

- Always fast-forward a new tape to its end, then rewind before using it for the first time. Tapes occasionally are not tensioned properly during manufacturing, and this procedure is a simple precaution against the picture distortion that can result.
- Protect valuable tapes from erasure by breaking off the small square plastic tab on the back edge of the cassette. With the tab missing, your VCR won't record on that tape. You can undo the safeguard by covering the hole where the tab used to be with a piece of heavy tape.
- For speedy fast-forwarding and rewinding, don't do it while the tape is playing. Press STOP first. You'll get there much faster and avoid unnecessary wear and tear to the tape and the VCR.
- When setting your VCR to record a program in the future, don't forget to set the day and date as well as the starting and ending time of the program. When recording programs in the wee hours, don't forget that the day and date change at midnight! Some TV listings sources don't change dates until 5 a.m., but your VCR adheres to the true calendar day.
- Most VCRs have two or three speeds. At the normal speed, you can record about two hours on a standard T-120 cassette. By selecting Long Play (LP), you can extend that to four hours. Extended Play (EP) or Super Long Play (SLP) gives you six hours on a T-120. You sacrifice some picture quality at these slower speeds, but for most purposes the results are adequate. When buying tapes, note that the "T" number indicates minutes of recording time at normal speed.
- If a tape recorded on a different machine looks jumpy or fuzzy when played, adjust the "tracking" control located on the front of the VCR.
- If the problem is connecting your VCR to your TV–especially if your cable box makes it more confusing–call your local cable company. If they can't talk you through it, they may have printed material to help you, or they may send an installer to set up your system.

(From *Cable in the Classroom.*)

New Books Examine the Media

Why Should Schools Teach TV?

Television and the Quality of Life: How Viewing Shapes Everyday Experience by Robert Kubey and Mihaly Csikszentmihalyi.

The grim message of this book, which is a result of extensive research into how people feel about television in their everyday lives, is that Americans are a nation of passive television watchers, who get more pleasure from television than from sex, food, hobbies, religion, marriage, money, or sports. And when serious cultural fare is offered to viewers, the great majority choose light, escapist content.

Changing America's relationship to television should begin in schools, say the authors, so that people will become less readily manipulated by the medium and will demand better programming.

"No one thinks twice about instructing children in how to read a novel, a poem or an essay, but in point of fact the amount of time most people will spend reading these forms relative to the amount of time they will spend watching television would boggle the mind," they write.

Available from Lawrence Erlbaum Associates, 365 Broadway, Hillsdale NJ 07642. Phone 201 666-4110.

Media and You: An Elementary Media Literacy Curriculum by Donna Lloyd-Kolkin and Kathleen R. Tyner.

The authors of *Media and You* believe that media education should begin early, and they offer a five-unit curriculum for elementary school students.

They propose that media literacy be integrated into existing subject matter, probably language arts or social studies, so that being aware of media is "as natural a function as breathing."

A variety of hands-on activities and worksheets are offered to help elementary students analyze the news, understand how advertising works, and otherwise gain some control over the media in their lives.

Available from Educational Technology Publications, 720 Palisade Avenue, Englewood Cliffs NJ 07632.

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Publishers Must Change Basals

Whole Language Requires Whole New Philosophy

The theory/philosophy of whole language is central to current ideas about teaching language arts and literature.

Basal textbooks would appear to be totally at odds with the whole language concept, and that issue was recently addressed by Connie Weaver, author of the book *Understanding Whole Language*, in a paper delivered to the Association of American Publishers.

"Whole language educators are distressed at the recent tendency of publishers to label instructional materials as 'whole language,' despite educators' insistence that whole language is a philosophy of education reflecting a theory of learning...and most certainly not a prepackaged program," she says.

Textbook publishers should incorporate insights from whole language research when developing materials. Presenting reading as a sequence of skills to be mastered, as current textbooks do, guarantees that many children will be less successful readers, she says.

Whole language research shows that reading is a complex process requiring the integration of many strategies; no evidence exists to show that reading proceeds as a "linear, hierarchic sequence of skills" or that literal comprehension precedes more sophisticated kinds of comprehension, even though these assumptions are a part of nearly all reading series.

Publishers should abandon their traditional basal series and instead provide thematically-oriented collections of books and other resources for roughly grades K-2, 3-4, 5-6, says Weaver.

Within each theme set, materials should be of varying levels of difficulty, so that there is no sharp division between materials intended for contiguous levels. Teachers should be provided with information on obtaining a variety of books and other material related to the theme.

For the teaching of phonics in particular, students in K-2 should have numerous stories, songs, and poems that employ alliteration, rhyme, and onomatopoeia.

Schools embracing the whole language philosophy need consultant services in place of workbooks and tests, says Weaver. Publishers should hire experienced whole language teachers who would work intensively with a school for a minimum of two years.

Teachers should be furnished with a resource manual that illustrates how they might initiate the exploration of a theme or topic, how to demonstrate the use of research skills, how to facilitate collaborative learning, and how to keep records of what students are doing.

By incorporating these and other whole language insights into their program, publishers will help teachers grow into the whole language philosophy of teaching and learning.

Social Science Book List Ready

A new list of over 1300 recommended children's books that integrate literature with history and social science will be available from the California State Department of Education in March.

Including fiction, picture books, biography, myth, legends, folk tales, plays, and poetry for K-8 students, the list is based on the California History and Social Science Framework.

A similar list for high school students will be available later this year.

For more information, contact Rodney Atkinson, 916 322- 4016.

Honors Bestowed On Childrens' Books

Here are this year's winners of the most prestigious children's book awards, recently announced by the American Library Association.

Black and White by David Macaulay. 1991 Caldecott Medal for most distinguished picture book for children.

Maniac Magee by Jerry Spinelli. 1991 Newbery Medal for the most distinguished contribution to American literature for children.

More More More, Said the Baby: 3 Love Stories by Vera B. Williams. Caldecott Honor Book.

Puss in Boots by Charles Perrault, illustrated by Fred Marcellino. Caldecott Honor Book.

The True Confessions of Charlotte Doyle by Avi. Newbery Honor Book.

The Road to Memphis by Mildred D. Taylor. Coretta Scott King Award.

Aida retold by Leontyne Price. Coretta Scott King Award.

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Research & Reports

Teachers Use Texts Less; Lack of Diversity Remains

One teacher in four says she doesn't use textbooks in teaching any subjects for which she is responsible. Seventy-six percent of teachers report that they use textbooks less than they did three or four years ago.

This was among the findings of a survey on teacher attitudes about textbooks conducted by the educational consulting firm of Landsmann and Schutz. Other findings:

- Teachers in general feel that textbooks today are much better than they were several years ago.
- While teachers report they want more hands-on materials and other resources from publishers, at the same time a reaction against "materials overload" is occurring, with teachers feeling they are getting too many useless materials and too much glitz from publishers. The report recommends that publishers focus on quality of materials, rather than quantity, and on content, rather than packaging.
- Though teachers desire multicultural materials for a wide range of students, there is "an undercurrent of not wanting the tail to wag the dog."
- Sixty-seven percent of teachers say they have more involvement in the selection and purchase of curriculum materials than they used to have. Nearly half the teachers served on a textbook committee in the last two years.
- Teachers want to deal with publishers who understand their profession and they seek partnerships with publishers that represent an authentic collaboration.
- Publishers should draw more on the professional skills of teachers and have them participate in development, testing, and marketing of textbooks and related products, the report recommends.

Treatment of diversity in textbooks has not improved much over the past fifteen years or so, although a few textbooks have improved in specific, limited ways.

So reports Christine E. Sleeter in "Race, Class, Gender and Disability in Current Textbooks," published in *Politics and Textbooks* (Routledge, Chapman & Hall).

- Although minority groups are represented, textbooks contain very little information about contemporary race relations or issues for which these groups currently are struggling. The textbooks convey an image of harmonious blending of people of different colors, dominated by white people, and "suggest that everyone is happy with this arrangement."
- Textbooks convey the image that no real issues involving sexism exist today, that any battles for equality have been won.
- The great majority of people and situations in textbooks are middle class. The image portrayed in all subject areas is that there is no poverty or great wealth.
- Textbooks avoid "helping students learn why people are poor, what poverty is like or how people have struggled over how wealth should be distributed," says the author.
- While publishers appear to give space to groups on the basis on their representation in the population, research shows that these groups are treated superficially and piecemeal.

- Ninety-two percent of preschool-age children in low-income households currently watch the television program *Sesame Street*, with almost 80% watching at least once a week and 57% viewing daily, according to a recent survey commissioned by Children's Television Workshop.

Programs produced by the Public Broadcasting System are the favorites among teachers, with an estimated 57.6% of teachers using its programming in the classroom. More than a quarter of teachers utilize programming from the three major networks. Cable programming is widely accepted, with the offerings of The Discovery Channel, used by 24% of teachers, being the most popular. These findings are based on a survey by Bruskin Associates Market Research.

There was no significant difference in academic performance between students in a classroom teaching situation and those receiving televised instruction at a remote site says a recent report, "Televised Teaching Effectiveness: Two Case Studies" by Jaesam Chung (*Educational Technology*). Differences in attitudes among the two *continued on page 6*

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Research & Reports

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groups of students did occur, however. Remote site students were relatively less satisfied with the instructor's evaluation of their work and felt the course was more difficult than did other students. Students in the study were at the graduate level.

Most children who use home computers are not using them for academic learning. This was the finding of a two-year study, "51 Families with Microcomputers: A Study of Children's Academic Uses of Microcomputers at Home" by Joseph B. Giaquinta and Peggy Ann Lare (*Educational Technology Research and Development*). Some of the reasons cited for this:

- Parental pressure and support for home academic computing is absent.
- Parents "seemed to accept that the school should determine where, when and how their children would learn to use microcomputers."
- A dearth of academic software exists in most homes.
- Schools do not emphasize the need for home academic computing.

The authors suggest that to remedy the situation:

- Schools should place more emphasis on academic software and convey its importance directly to families. Schools should be willing to demonstrate how software can be used at home and be willing to share school software for home use.
- Developers of academic software should begin to conceptualize the role behaviors of parents and children that would foster use of academic software at home. This should be built into industry development costs.

There is strong support among the general public for more computer training in schools. Seventy-nine percent of respondents to the 22nd Annual Gallup Poll Of the Public's Attitudes Toward Public Schools believed that computer training should receive more emphasis in high schools. It was among the top three subjects that respondents believed should be given priority; the other two subjects were mathematics, supported by 80% of respondents, and English, supported by 79%.

What computer competencies do classroom teachers need? According to a study by the Northwest Council for Computer Education and Oregon State University, "Competencies for Computer Using Educators," the most important skills for elementary, middle, and high school teachers are:

- the ability to fit the computer to the curriculum, rather than the curriculum to the computer;
- knowledge of copyright law and ethical issues of computer use;
- proficiency in using the computer as a personal and professional tool.

Schools that are using computer conferencing will profit from a report by Deal R. Spitzer in "Computer Conferencing: A New Tool for Business and Education" (*Educational Technology*). Some of his tips for improving computer conferencing are:

- Select participants who truly have a need and who are disciplined.
- Make sure participants have access to the right hardware and software.
- Provide adequate training in how to use the system.
- Organize the conference carefully.
- Ensure an effective conference moderator.
- Provide timely feedback.

More than 35 states have or are planning major multi-million dollar educational telecommunications networks, according to *The Heller Report*, a newsletter for producers of educational technology and telecommunications.

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Technology FutureWatch

Systems for Tomorrow's Classrooms

The next major personal computer product is expected to be the pen-based computer, a lightweight, clipboard-sized machine that utilizes an electronic pen, rather than a keyboard or mouse. Currently, these computers understand printed but not cursive writing; if the user writes on it in longhand, it will store, but not recognize, the information. Tandy is already selling its GRiDPad systems to business for tasks such as taking inventory and filling out forms. This technology would appear to have many school uses, but no one is speculating if and when it will be sufficiently sophisticated and affordable for educational use.

Apple has petitioned the Federal Communications Commission to let computers transmit and receive information over radio waves instead of through a wired network. If approved, this innovation would eliminate the need in many cases for local communications to travel on wired networks. School users would be able to communicate within a building or campus over radio waves.

High definition television (HDTV), the technology that will transmit large-screen, movie quality pictures, will likely be commonplace by the end of the 1990s. Not only will HDTV affect the quality and size of what we see, its usefulness for educational purposes will be enhanced because it will be smarter. Viewers will be able to program their televisions to record, say, all references to Senate confirmation hearings in a particular time period. Users will also be able to translate the language of a show, edit it, change the camera angle, or otherwise make it more suited to individual learning purposes.

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EPIEgram

The Newsletter About Educational Materials and Technology

Affiliated with EPIE Institute — Volume 17, Number 6, 1991

Are Science Texts Improving?

Some See Hope As Science Curricula Change

Are science textbooks getting better?

In recent interviews with university-level scientists and science educators who review textbooks, most of them agreed with the pronouncement by one of them that science textbooks are "astonishingly bad," and they seemed to despair of ever getting better ones.

"Nothing has changed in thirty years, except we have more four-color pictures," said physicist Clifford Swartz of the State University of New York at Stonybrook.

But some science educators are more optimistic, believing that they have begun to see a turnaround in the quality of science textbooks. Eugenie Scott, Executive Director of the National Center of Science Educators, says, "The science curriculum is moving away from being a body of facts and toward being a body of theory, and this is starting to be reflected in textbooks."

A variety of problems have plagued science textbooks for years. First, errors have been pervasive. Physicist Mario Iona, Professor Emeritus at the University of Denver, uncovers "an astounding number of errors " in K-12 textbooks, which he writes about in a column for *The Physics Teacher*. He finds that textbooks present innumerable items incorrectly, give wrong answers to test questions, use inappropriate examples, and make many mistakes in art.

Another problem that has recently emerged is the removal of material on dissection from textbooks, because of pressure from animal-rights activists. "It's like studying about cars without lifting the hood," says biologist Richard Schrock, Director of the Biology Education Program at Emporia State University. "We are very concerned."

But Scott says, "For far too many classes, dissection has become a ritual. It has its place and must be done with a sense of purpose." Many biology teachers would agree, but point out that when textbook publishers make the decision to eliminate dissection from textbooks, they are, in effect, eliminating it from many classrooms, since the textbook so often dictates the curriculum. Whether to teach dissection is a decision that should be made by the teacher or by school or district policy. (See story, page 3.)

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IBM Introduces *Writing to Write*

Companion to Reading Program

In April, IBM is rolling out a companion product to its popular but controversial *Writing to Read* program.

Writing to Read is a computer laboratory-based reading and writing program for kindergartners and first graders that is now installed in 7000 schools.

Writing to Write will continue the development of writing for second graders, according to IBM. Students will plan, draft, revise and "publish" their work, using equipment in individual classrooms, rather than in computer labs.

The system will work on networked PS/2 Model 25 computers, and will feature voice synthesizers that will "read back" stories to children. It also will have colorful graphics designed to motivate students.

Writing to Write can be used either as a follow-up to *Writing to Read* or independently. According to IBM, the program puts emphasis on "the process of writing" rather than the mechanics of writing. Children will work with it for half an hour a day.

Prepared under the direction of Dr. John Henry Martin, who devised the pedagogy for *Writing to Read*, *Writing to Write* is part of the IBM Teaching and Learning With Computers (TLC) methodology, which advocates placing computers

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I Need Help! Where to Find Reviews

For reviews of elementary and secondary science books, here are some sources:

BookWatch Reviews. Offering three reviews per issue, with each book reviewed by two scientists and a university-level science educator, this newsletter focuses on junior and senior high school texts. National Center for Science Education, P. O. Box 9477, Berkeley CA 94709-0477. $18 a year.

Biology Textbooks: 1990. This report on nine 1990 biology textbooks reviews them for treatment of evolution and the nature of science. People for the American Way, 2000 M Street, N. W., Suite 400, Washington DC 20036.

The Textbook Letter. This newsletter reviews textbooks in health, biology, and life science. California Textbook League, P. O. Box 51, Sausalito CA 94966. $36 a year.

The Physics Teacher. This magazine runs a column "Would You Believe" several times a year, pointing out physics errors in K-12 textbooks. American Association of Physics Teachers, 5112 Berwin Road, College Park, MD 20740.

Are Science Texts Improving?

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Are students led to "hands-on" activities by science textbooks? "Science textbooks may give lip service to 'hands-on' activities, says Swartz, "but the main track of the text usually does not require a lab."

"Most science lessons revolve around the text," writes John F. Newport in "What's Wrong With Science Textbooks" (*Principal*). Textbook authors give murky messages, he says. They may tell teachers to use a wide variety of approaches, but in fact offer very few. Newport calls teaching science with a textbook the "least effective and perhaps the most harmful method."

Science educators have complained loudly and often that most textbooks emphasize vocabulary. One study of science textbooks for grades 6 to 9 showed that students were expected to learn some 2500 new words. This is double the number of words they would learn in a foreign language course.

Speaking of a junior-high text that he recently reviewed, Swartz said, "It's a big picture dictionary. It's not that it contains a lot of mistakes. It's that it's not a science book. It has no relationship to science."

And that may be the overriding trouble with science textbooks: they present a miscellany of definitions and facts, but they fail to teach students the nature or processes of science and do not present the sciences as disciplines unified by a theoretical structure.

Textbooks in nearly all subject areas have been under similar criticism in recent years: they present a torrent of facts without a context, covering every topic that might be in any curriculum in order to meet adoption requirements.

But science textbooks have suffered particularly, some believe, because of the political pressures to remove evolution from textbooks. "Evolution is intricately woven into the fabric of science at every level: the universe evolves, the solar system evolves, earth evolves, earth's organisms evolve and there are intimate connections among and within these processes," writes Lawrence S. Lerner in *The Textbook Letter*. To disguise evolution is to disguise the nature of science.

But this is now changing. A number of biology books published in 1990 have been favorably reviewed for their coverage of evolution, though the coverage of the nature of science was believed to be inadequate.

The State of California, which has great influence with publishers because it represents a large portion of the textbook market, has recently developed a new framework for science. The framework guides schools as they develop curricula and publishers as they plan textbooks. This framework was carefully formulated to ensure that the sciences would be presented as disciplines unified by a theoretical structure.

"The framework does not just demand new science books; it demands a new approach to writing such books," writes Lerner.

Scott points out that other national initiatives to reform science teaching will change the science curriculum, forcing publishers to change their textbooks.

It's not just the publishers who are at fault, says Scott. "They are one part of a system. They are reactors. Sales are affected by teacher choice and committee pressure. As science education improves, science textbooks will improve."

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Dissection Controversy Builds

Animal-Rights Activists Ask for Alternatives

Opposition to classroom dissection is expected to surge this spring in the face of a new campaign by animal-rights activists.

Administrators and school-board members will be lobbied in an effort to get schools to replace dissection of animals with computer simulations or other alternatives. Many schools have already discarded dissection or have allowed alternatives to students who do not wish to participate.

The policy statement of The National Association of Biology Teachers reads: "Well-constructed dissection activities conducted by thoughtful instructors can illustrate important and enduring principles in biology." But the group supports alternatives to dissection and vivisection wherever possible in the biology curriculum.

Alternatives may include interactive instructional material such as computer simulations, videodiscs, and films. Here are some programs schools to consider.

Videodiscs

Frog Anatomy and Physiology. (Living Textbook Series) More than 150 slides, 50 diagrams, and 34 movie clips provide a review of amphibian anatomy and physiology. Includes lesson guides with barcoded access to videodiscs and interactive software. Optical Data Corporation, $495, (800) 524-2481.

Bio Sci II. Covers major topics in biology and includes eight full dissections of the frog, fetal pig, earthworm, mussel, squid, crayfish, sea star and perch, all easily accessed. Videodiscovery, $549, (800) 548-3472.

Computer Software

VisiFrog and *The Earthworm.* Billed as alternatives to vivisection, these two programs use computer graphics to introduce anatomical structure and biological functions. Ventura Educational Systems, (800) 336-1022.

Operation Frog. This computer program duplicates an actual dissection, according to its publisher. Scholastic, $79.95, (800) 541-5513.

Filmstrips

Biological Dissection. Contains an introduction to dissection of the earthworm, the crayfish, the fish and the frog. Discover Science Opportunities for Learning, 20417 Nordhof St., Dept R986, Chatsworth, CA 91311.

The National Association of Biology Teachers offers a monograph, "Responsible Use of Animals in Biology Classrooms," containing lessons—from elementary level through undergraduate—that are alternatives to dissection, plus an extensive, annotated list of resources. NABT, 11230 Roger Bacon Drive, #19, Reston, VA 22090, (703) 471-1134, $15.

IBM Introduces *Writing to Write*

Continued from page 1

directly in the classrooms so that teachers can incorporate them into daily activities. A set of the courseware—enough for 30 students—will cost $4610. The program requires one computer for every four students.

The *Writing to Read* program has been criticized by researchers who report that the system is no more effective at teaching reading than other programs that sell for a fraction of the cost of the IBM program.

For instance, Robert Slavin of the Center for Research in Effective Schooling for Disadvantaged Students at Johns Hopkins University has written: "The most optimistic reading of the research would say that *Writing to Read* is an expensive means of moderately improving the reading achievement of kindergarten children, with no known long-term impacts. Schools might be justified in choosing the program as a means of introducing creative writing in their kindergarten and first grade, but there are certainly less expensive and elaborate ways of doing this."

Others have reported that the program has brought about "startling gains" among children with a wide range of abilities, but because the program is designed for one year only, children then go on to other basal reading programs and the first year gains eventually disappear.

Speaking for IBM, Virginia Nelms indicated that *Writing to Write* will reinforce skills from *Writing to Read*, even though it is primarily a writing program, not a reading program.

Many people see the two programs as part of an IBM effort to expand its share of the school market, a market that is dominated by Apple Computer. In Mississippi, *Writing to Read* is being installed in every elementary classroom.

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CD-ROM: Status Report

More Compact Discs for Classroom Use

CD-ROM first emerged in 1984, and while it has brought revolutionary advances to business and libraries, schools have been slow to adopt it for classroom use.

CD-ROM, which stands for Compact Disc—Read Only Memory, is a 4.75-inch laser disc, a random-access storage medium that can hold 250,000 pages of text, or 74 minutes of audio, or thousands of still pictures, or any combination of these. A CD-ROM player is a peripheral device that connects to a personal computer; a CD-ROM drive may be part of the computer itself. CD-ROM is used to publish electronically large databases and reference works and for multimedia applications.

New developments in the field indicate that CD-ROM may be coming into its own as an educational tool.

"The whole concept of computer software for education is likely to be radically changed" as a result of CD-ROM, writes Henry Jay Becker of The Johns Hopkins University. Three encyclopedias are currently available on CD-ROM (see box below). Becker views these as breakthrough products for education, "the first of a long line of products that will actually provide the instructional content and computer-based methods that schools have been promised for so long."

"These CD-ROM encyclopedias are more than just harbingers of a new period of instructional software. They are demonstrably useful and powerful tools for teaching right now," he writes.

Some New Programs

A number of programs for classroom use are available in addition to the encyclopedias. Some examples are:

National Geographic's *Mammals* features more than 200 differents animals including 700 color photographs, 155 vocalizations, 150 range maps, and 45 full-motion movie clips.

The Time Table of Science and Innovation allows the user to click on any historic event to hear voice-over narration describing its significance and to search for events in history by keywords or by dates. Its graphic features include maps, charts, and animation.

The Ecodisc is a simulation of a nature reserve that the user can explore, walking around it to observe and collect information and consulting with experts about it.

Most CD-ROM products, however, have not been designed specifically for the school market, though they may be useful in the classroom. The industry's bestselling product, *Microsoft Bookshelf*, a collection of reference works, was originally conceived as a tool for writers, but has proved practical for students as well.

Many CD-ROM products unfortunately do not take full advantage of the technology. For example, a *Shakespeare* program consists of all the plays, but does not utilize the sound capabilities to provide readings, or the graphics capabilities to give diagrams for staging or photographs of famous productions.

Many CD-ROM discs simply amass large amounts of data, often from public domain sources such as government reports. This can be valid and useful information for student research, but teachers should screen these programs for grade appropriateness.

The Pros and Cons

So should you buy a CD-ROM player? Here are some things to think about:

- CD-ROM can give your students easy access to massive amounts of information, making searches easier and faster.
- Prices for players are relatively low, beginning at $600.
- The encyclopedias in particular will offer your students a new and valuable learning experience.

On the other hand:

- A limited number of programs specifically geared to the classroom are currently available. Except for the encyclopedias, most other programs are not "must haves." Optical disc technology provides a greater number of classroom-oriented multimedia programs.
- Current CD-ROM technology will probably be replaced by some variation on it in the near future.

Free to *EPIEgram* Subscribers!

If you are thinking about an electronic encyclopedia for your library or classroom but don't know which to select, help is at hand.

EPIEgram is offering readers a copy of a recent evaluation by Henry Becker of three CD-ROM encyclopedias suited to school use: *Compton's Multimedia Encyclopedia*, *Grolier's New Electronic Encyclopedia*, and *Information Finder by World Book*. The 14-page review originally appeared in the journal, *Educational Technology*. For your free copy, write to *EPIEgram*, 146 Sterling Avenue, Greenport NY 11944.

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Research & Reports

Teachers Often Must Pay for Classroom Materials

Exceptional teachers recognize the need for good alternative materials, but often can only obtain them by paying out of their own pockets, "an insulting and prohibitive activity," according to "Voices from the Classroom: Exceptional Teachers Speak," a report by the Gallup Organization based on polling 230 teachers designated as "exceptional." Exceptional teachers feel constrained by curriculum mandates that rely heavily on textbooks, yet find that directives of the school system dictate covering certain textbook information. They also feel hampered by the lack of computer hardware and software and believe they cannot get sufficient training to learn how to make use of technology.

The average teacher spends about $500 a year of his or her own money on behalf of students, according to a survey by the Carnegie Foundation for the Advancement of Teaching.

How do teachers use educational television? They find it most useful for motivating students (83%), reinforcing a lesson (67%), and enrichment and remediation (60%). These were among the findings of a recently-released survey "How Teachers and Media Specialists Grade Cable TV," commissioned by the Arts and Entertainment Network. Teachers felt educational television was most powerful in the area of current events (56%), followed by literature (38%), performing arts (37%), and history (33%). Seventy-two percent of the teachers said they needed more print back-up materials to help plan better lessons.

Surprises may be in store for schools that initiate an extensive program of computer-based instruction. In a report, "Three Lessons I Learned From a Year of Computer-Based Instruction," author Joseph J. D'Amico writes:

- Do not underestimate the importance of local context. This means that successful implementation requires strong administrative leadership, the absence of any competing innovations during the year of introduction, a strong preexisting consensus about school goals, and the presence of strong local advocates.
- Do not overestimate instructional impact. Teachers will not initially adapt their instructional approach to take computer-based instruction into account but rather use it to reinforce lessons they have always taught. Instructional gains may seem marginal in the first year.
- Expect a major impact on school organization and culture. Instructional planning and decision-making became group activities involving not only teachers but also principals and lab managers. D'Amico found that the staff took advantage of student achievement data to tailor the student's work according to their needs. Computer-based instruction dominated local staff development.

Another survey of the use of educational television in the classroom, this one from Children's Television Workshop, shows that most teachers:

- use selected shows rather than an entire series;
- tape shows off the air rather than using tapes purchased or rented; and
- have very little information about "tape and erase" rights for using educational programs.

Librarians and media specialists are the major providers of information about educational programming and they are most likely to influence and encourage the teacher's use of educational programming.

A group of researchers working with minority children has a different approach to the introduction of computers. They use computers as a part of an educational program the primary objective of which is to help children acquire a critical orientation and understanding of the world they live in and to formulate and analyze problems. The three principles that guide their work:

- Principle 1. All educational activities should be organized toward helping students develop a theoretical approach to subject matter. The computer is part of a program to develop models of the object or phenomenon being studied, enabling students to take concrete instances and formulate general abstract relations that they embody.
- Principle 2. The motivation for investigating a particular topic in the curriculum should come from the subject matter and *Continued on page 6*

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the way it has been developed with the students. The computer in itself is not sufficient to keep students motivated.

- Principle 3. Computer use should be embedded as part of a larger educational program. The computer is not the focus nor the objective of an activity, but rather a tool to help develop educational objectives.

The study, "The Horse Before the Cart: A Theory Based Approach to Using Computers in Education," by S. Chaiklin, M. Hedegaard, K. Navarro, and P. Pedraza was published in *Theory Into Practice*.

Teachers need time to evolve into productive, innovative users of technology and to integrate it successfully into their classrooms.

This is one of the conclusions of a study of computer-using teachers and students over four years, "Evolution of Teachers' Instructional Beliefs and Practices in High Access-to-Technology Classrooms," an Apple Classrooms of Tomorrow report.

- Initially when computers were introduced into the classroom, teachers felt conflicted because their established ideas about teaching and control were challenged.
- As computers were used more and more, teachers became concerned whether students were learning as much in the student-centered, active classrooms as they did in passive, teacher-centered classes. Teachers wanted to confirm their long-held beliefs about content, control, and teaching.
- As time went on, teachers' attitudes about teaching and learning began to change slowly, as they questioned the methods they had used in the past.
- Whether teachers can change their attitudes about teaching and learning greatly influences the success of computer programs. Administrative support, peer observation, and willingness to experiment and grow are also important to success.

First-graders have learned to perceive computers as a masculine activity, even when they interact daily with microcomputers in the classroom on an equitable, cooperative basis in the context of language arts. In a study of gender stereotypes about reading, writing, and computer use among first graders, researchers found that young children do not perceive reading as a female activity and have no consistent gender association for writing. Computer use, however, was seen as a masculine activity by all children. The authors characterized the results as "discouraging, especially in contrast to other studies which support the impact of interventions on gender stereotyping." The study "The Effect of Computer Use on Grade 1 Children's Gender Stereotypes About Reading, Writing, and Computer Use" by Betty Collis and Lloyd Ollila appeared in the *Journal of Research and Development in Education*.

Education invests a smaller portion of its resources in labor-saving technology than any other major industry. The reason for this is the inherent absence of competitive, market incentives in the bureaucratic structure of the U.S. educational system, according to a report from the Hudson Institute, "Closing Education's Technology Gap" by Lewis J. Perelman. "Continual attempts to inject technological innovation into American schools and colleges through subsidized experimental, pilot, and demonstration projects or top-down bureaucratic mandates have failed as thoroughly as similar initiatives in the Soviet state agricultural system." Public schools will remain technologically backward until they are forced to attract customers, i.e. students. The report further suggests closing the huge research and development gap by getting every education organization in the U.S. to set aside at least 1% of its gross revenues for research and development.

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Joanne Dolinar and Earl Fultz, Publishers
P. Kenneth Komoski, Exec. Director, EPIE Institute

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Bestsellers for Children

Here are the Children's Bestsellers for February, 1991, based on the *Publishers Weekly* lists:

Picture Books

1. *The Very Quiet Cricket.* Eric Carle.
2. *Black and White.* David Macaulay.
3. *The True Story of the Three Little Pigs.* Jon Scieszka.
4. *The Great Waldo Search.* Martin Handford.
5. *"More, More, More" Said the Baby.* Vera B. Williams.
6. *Puss in Boots.* Charles Perrault, trs. by Malcolm Arthur.
7. *Oh, the Places You'll Go!* Dr. Seuss.
8. *Where's Waldo? The Ultimate Fun Book!* Martin Handford.
9. *Just a Dream.* Chris Van Allsburg.
10. *The Wheels on the Bus.* Adapted and illus. by Paul O. Zelinsky.

Younger Readers

1. *The Berenstain Bears' Trouble with Pets.* Stan and Jan Berenstain.
2. *Karen's in Love* (Baby-sitters, Little Sister #15). Ann M. Martin.
3. *The Berenstain Bears and the Slumber Party.* Stan and Jan Berenstain.
4. *Esio Trot.* Roald Dahl, illus. by Quentin Blake.
5. *Ready...Set...Read!* Compiled by Joanna Cole and Stephanie Calmenson.

Middle Readers

1. *The Big Book for Peace.* Edited by Ann Durell and Marilyn Sachs.
2. *Matilda.* Roald Dahl.
3. *Mary Anne vs. Logan* (Baby-sitters Club #41).
4. *Number the Stars.* Lois Lowry.
5. *Fudge-A-Mania.* Judy Blume.

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EPIEgram

The Newsletter About Educational Materials and Technology

Affiliated with EPIE Institute — Volume 17, Number 7, 1991

Are Computer Monitors Safe?

Researchers Explore Possible Health Risks

The question of whether computer monitors give off dangerous electromagnetic emissions related to cancer has been floating around for several years, but no definitive answer has been found.

Causing the concern are the 60-hertz fields emitted by computer monitors. Sixty-hertz fields are electromagnetic fields oscillating at 60 cycles a second, produced by alternating current which surges back and forth 60 times a second in electric wires.

Studies in the last decade have suggested a connection between these fields and increased risk of cancer. Last year an Environmental Protection Agency report examined the research and concluded that data from both animal and epidemiologic studies in humans suggests that electromagnetic fields are a possible but not proven cause of cancer in humans.

Some 300 scientists around the country are now investigating the possible linkage, trying to find the exact biological mechanism that would explain how electromagnetic fields might increase the risk of cancer.

But don't throw out the computers yet. You would also have to throw out the television, hairdryers, and any other of a number of other modern conveniences, all of which produce similar electromagnetic fields. But computers have caused special concern, particularly in the workplace, because they may be used every day for hours at a time with the user close to the screen where the emissions are strong.

The studies that have been done about electromagnetic fields and health mostly involve sources other than computer screens and are often inconclusive or contradictory.

Emissions from power lines are similar to those from computer monitors, and linemen and other electrical workers have been the subjects of some 25 reports on the health effects of electromagnetic emissions since 1976, according to the *Harvard Medical School Health Letter.* *Continued on page 2*

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How to Design A WritingLand

Weaving in the Computer

How can teachers weave the computer into the human fabric of a writing workshop? This is a question that the Gateway Writing Project in St. Louis has been researching since 1984. Here is an excerpt from the book WritingLands: Composing with Old and New Writing Tools *by Jane Zeni (NCTE, 1990), which tells of experiences in setting up computer environments called WritingLands for student writers in elementary and secondary schools as part of that project.*

Planning a computer-equipped environment for writers makes me feel like a mapmaker in the Age of Exploration—I sit by candlelight drafting maps based on travelers' reports of a New World with its fabled Seven Cities of Gold. And some distant conquistador will trudge the desert, map in hand, searching for the gold amid the hostile elements.

Here are a few landmarks that schools have found helpful in designing a WritingLand.

Priorities: Teachers before Tools. In your budget, the one essential item is good teaching. Better to plan a really fine classroom with a dozen computers and a full-time writing teacher than to invest in thirty machines and a program that is too big to monitor. Be sure that there will be skilled support available while students are actually composing at the computer.

Think of how the computer can enhance the way you want to teach writing. *Continued on page 4*

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Michigan Sets Pace for Consortium

Offers PC-TESS at 100 Sites

Michigan is the first member of the States' Consortium for the Improvement of Software Selection to have PC-TESS available on a statewide basis, with the help of a grant from the Mott Foundation.

PC-TESS is an electronic, searchable database of information on over 12,000 educational software programs. It is in now installed in more than 100 sites in Michigan, including all regional services agencies, some local schools, and colleges and universities.

"We were ready when the Michigan legislature decided to put computers in every classroom," said Rachael Moreno, Chair of the States' Consortium and Associate Superintendent of Genesee Intermediate School District (GISD), which piloted and disseminated PC-TESS statewide. "When school leaders asked 'How will we know what software to buy?,' we were able to say, 'Check with PC-TESS. It's in your ISD.'"

Here's how software selection works in Michigan. If a teacher wants to find software on dissection for a tenth grade biology class, she fills out a form asking for a search by subject, grade, software type, computer type, and price, and sends it along to a PC-TESS site. PC-TESS quickly sifts through the characteristics of all the educational software in existence to give a list of those programs that meet her specifications. The printout will provide a description of each program, the address of the publisher, review citations, and even the names and addresses of other teachers who have used the software.

Other states are now benefiting from Michigan's experience because new members of the Consortium, or states considering membership, can consult with Moreno.

The States' Consortium was formed last year by EPIE Institute, which developed PC-TESS and licenses it to member states for distribution.

Texas is the most recent state to become a member of the Consortium, joining New York, Utah, Georgia, and Michigan. Texas intends to put the PC-TESS database into every school in the state, some 5000.

P. Kenneth Komoski, Director of EPIE Institute, said: "As the managing agency of the Consortium, EPIE is delighted that it now has five states and that there are 20 others, as well as two Canadian provinces, with which we are in active discussions." Agencies that wish to receive more information about the Consortium should call EPIE Institute, 516 728-9100.

Are Computer Monitors Safe?

Continued from page 1

Seventeen of the studies have found slight increases in leukemia or brain tumors among the exposed subjects, while eight others found no difference in health or mortality between exposed and unexposed subjects.

Another study showed that children living in homes with strong magnetic fields had a risk that was 1.4 to 2 times higher than average of developing cancer or leukemia. The evidence is considered "strong but not conclusive," according to the *Harvard Medical School Health Letter*.

"In our current state of knowledge, it is impossible to say whether 60-hertz electromagnetic fields pose a hazard to human health or, if they do, at what doses. To eliminate all exposure would require abolishing alternating current—a wholesale return to horse-and-buggy technology, to oil-burning lamps, to life without television or radio," according to the Harvard newsletter.

Last August Paul Brodeur, writing in the computing magazine *MacWorld*, reviewed the research relating to electromagnetic fields and increased risk of cancer. Published with the article were results of tests that measured the strength of the electromagnetic fields given off by commonly-used monitors. The tests showed that many of the monitors do emit magnetic fields that are as strong or even stronger than the electromagnetic force levels that have been associated with the development of cancer in children and workers.

Brodeur points out that in these tests, magnetic field emissions are relatively high close to the source, say, at four inches in front of the monitor. But they are considerably reduced 28 inches from the screen. Also, magnetic fields emitted from the sides and backs of most monitors are stronger than those from the front. Brodeur suggests these precautions:

- Users should position themselves at 28 inches from the screen (arm's length, with fingers extended).
- Users should maintain a distance of four feet from the front or back of any other monitors. Computer labs should be arranged to take this into account.

Other than following these precautions, users can only watch and wait for the results of ongoing research.

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Education Satellite May Become Reality

Would Spark More Distance Learning

A "public domain" satellite dedicated exclusively to education that would give schools low-cost, predictable, and equitable access to satellite services is recommended by EDSAT Institute in a recent report.

The satellite would stimulate further use of distance learning, making possible the distribution of high-quality educational programming in every school, college, and library in the country.

EDSAT Institute is a nonprofit organization formed to encourage the use of telecommunications in education. It conducted the study in response to a proposal from Governor Wallace Wilkinson (Kentucky) to President Bush.

Education now competes for satellite time with commercial buyers. States are paying as much as 40% more for educational satellite time than they would if they aggregated their buying power, according to the EDSAT report.

It is estimated that more than $50 million will be spent this year on satellite time for educational purposes. At this rate of spending, "without federal or outside support if the states aggregated their buying power, they could pay for the cost of a satellite within about seven years, including the annual cost of maintaining it."

The cost for constructing and launching such a satellite is estimated at between $150 and $200 million.

The case for an education satellite has become more compelling because it is uncertain if the private marketplace will be able to accommodate educational users in the future.

The report suggests several options for administering and paying for such a satellite, including partnerships among the states, federal government, and business.

Distance education is seen as a way to equalize the significant differences in the quality of education from community to community. It has been enthusiastically received in many areas of the country, particularly remote rural schools, where the supply of good teachers, especially in specialized subject areas, is meager. It has also been used extensively for college courses.

Quality Education Data reports that about 20,000 schools now have satellite dishes. Altogether, there are 55,000 receive sites for educational programming.

A number of studies have indicated that students learn as much through well-designed distance learning programs as they do in a face-to-face teaching situation.

Apple Introduces Low-Cost Printers

Apple has introduced companions for its new low-cost Macintosh computers: low-cost printers that the company says reduce the price of laser-quality printing by 70 percent.

The Apple StyleWriter, a thermal ink-jet printer priced at $599 (list, education discount available) prints text and graphics at about one-half page a minute in "best" quality mode (360 dots per inch) or one page per minute in "draft" mode (180 dpi).

The Apple Personal LaserWriter, a laser printer priced at $1299 (list, education discount available), prints up to four pages per minute with a resolution of 300 dpi. Both it and the StyleWriter offer four font families and 13 different type styles.

The printers will use the newly introduced True Type outline font technology, which will print at any size in a variety of type styles. The printers cannot be networked to serve more than one user.

New Folk-tale Videos Feature Celebrities

Whoopi Goldberg, Robin Williams, Michael Caine and Denzel Washington are among the celebrity narrators for a new series of international folk-tale videos, *We All Have Tales*, which feature top-notch art and music.

Produced by Rabbit Ears Productions, the $9.95 half-hour videos will be marketed to home consumers, but schools will want them too. Some of the titles are: "The Fool and the Flying Ship," a Russian story narrated by Robin Williams; "Moi and the Kola Nuts," an African folk-tale narrated by Whoopi Goldberg; and "Peach-boy," a Japanese story told by Sigourney Weaver.

The series will preview on Showtime this spring and in May the programs will be available on videocassette, audiotape, CD, and in a book/cassette package.

Earlier videos from Rabbit Ears include "The Elephant's Child," read by Jack Nicholson, and "The Velveteen Rabbit," read by Meryl Streep.

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How to Design AWritingland

Continued from page 1

For example the computer can aid collaboration, ease revision, and lead to professional-looking publications. It motivates reluctant writers. Plan your program keeping in mind these features of writing instruction, and let the computer help you. Avoid or minimize lessons that simply introduce the computer or teach a software application. Instead, provide the human support to teach writing well—assisted by the computer where it is a genuine asset.

Train Peer Tutors and Aides. You can increase that support by training a few students and paraprofessionals. These people need to know how to use the hardware and software, how to solve common technical problems, and how to give support to writers in process. Plan a tutoring workshop, with time for the tutors to do some of their own writing and to give and receive feedback.

Plan a Schedule. It helps if one person who is on-site—a writing-center director or librarian—takes charge of the schedule. To diffuse any resentment, include the whole staff in decisions on access.

Ideally, the center will be staffed by professional writing teachers. One or two may share the leadership, or a group of teachers may each be released one period per day to staff the facility. If you choose the second plan, our experience suggests that one person should be the director, who is given extra administrative hours to keep records and prepare materials such as a lab manual or tutor's handbook.

Don't Skimp on Space. Remember that a writing workshop needs more space than a computer-programming lab.

Ignoring the protests of the efficiency experts, negotiate for the largest possible room. Allow enough space for writers to spread out drafts, to move around, and to conference with peers and teachers.

You can increase the space that is actually available to writing classes by placing your WritingLand near a library or learning center. Design a way for people and activities to flow from the computer environment to other settings. Enlist the help and suggestions of librarians, media directors, and others responsible for the adjacent territory. If you can't plan a lab that will accommodate a whole writing class, plan for a cluster or suite of facilities, each with appropriate support for writers.

Start with a Flexible Design. As you develop a WritingLand, your plan will probably need several revisions. Avoid the sort of architectural changes that are hard to undo. First, get to know through experience what layout and equipment you really want. A flexible design in a pilot lab makes long-range planning and revision simpler. When the school wants to invest in a larger lab, equipment can be moved intact, without damage either to the workstations or to the original lab room.

Visit a WritingLand. The most effective research is also the simplest: go to see the best labs and computer classrooms in your area. Some computer-equipped writing programs have been recognized as NCTE Centers of Excellence, making them natural sites for such demonstrations. As you visit WritingLands, you will make new contacts with computer-wise educators who can be helpful in the future. Then, after taking another look at your own school setting and needs, you can adapt the models.

Sponsor a Schoolwide Inservice Workshop. If your computer writing facility will serve the whole English Department (or the whole school), why not celebrate its arrival with a workshop. Be sure the workshop indirectly teaches the computer, by demonstrating good writing lessons and helping teachers compose their own short papers at the keyboard. Keeping the writing light and personal will reduce stress and computer anxiety. Conclude the workshop by publishing a booklet of the teachers' writing, illustrated with graphics software. An inservice of twenty to thirty contact hours should prepare staff for a WritingLand.

Work with Your Administrators. Teachers can spend the summer at a writing institute and return to school full of enthusiasm for teaching writing with computers—only to find they can't get access to the lab, and the computers have been dedicated to a new drill-and-practice program.

Support from the top is essential to a WritingLand. Talk with principals, department chairs, computer and curriculum coordinators. Let colleagues know what you know.

Designing a WritingLand is itself a process of composition, so it takes planning and revisions, as well as collaboration, to create a successful one.

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Great Books Targets Early Readers

Read-Aloud Program Based on Shared Inquiry

The Great Books Foundation, the distinguished organization has brought great literature to people of all ages nationwide through organized discussion groups in schools and communities, has now initiated a reading program for kindergarten and first grade students.

The Junior Great Books Read-Aloud program is based on the philosophy of shared inquiry, which characterizes the Great Books programs for adults and older students. Selections are chosen because they represent quality literature that lends itself to extended interpretative discussion, says Carolyn Saper, co-ordinating editor.

The Read-Aloud program consists mostly of folktales from around the world and poetry. Among the authors in the series are the Brother Grimm, Beatrix Potter, A.A. Milne, Nikki Giovanni, and I.B. Singer.

The Foundation takes no position on how the program should be used, says Saper, but it could be as a supplement to a basal program or a replacement for one, or as part of a whole language program.

The program aims to give children an understanding of the purpose of reading and to make them reflective readers, says Saper. Each selection is read three times to a child: first in class, then at home by a parent or other adult. During the third reading, which takes place in class, the child follows along and then discusses open-ended questions and poses questions of his own. The children and the teachers are partners in the search for meaning in a text. Teachers ask questions that they themselves want to know the answer to, not to test the students, says Saper.

"The selections crystallize children's issues and speak to childhood concerns. It's wonderful literature that captures their imaginations and makes them think. That's what reading is all about," says Saper.

Teachers using the program must attend a two-day basic leader course. The foundation trains some 20,000 people a year, mostly teachers but also administrators, librarians, and parent volunteers.

The Junior Great Books program, established in 1962 and now in 3500 school districts, is designed to be used once a week in grades two to nine. This program integrates the reading with open-ended discussion and essay writing. The Junior Great Books Program is not always part of the curriculum. In some schools its a lunchtime or after school program. Sometimes it's a program for gifted students and other times for Chapter I students.

The Introduction to Great Books program, intended for junior and senior high school students, presents modern fiction and short selections from great works of philosophy, political science, psychology, and economics.

Children's Books: Oldies are Goodies

Further word about which books are most popular with children. Or, at least, which books children and their parents like to buy.

Last month *EPIEgram* published the February bestseller list of children's books, as compiled by *Publishers Weekly*. That bestseller list is based on frontlist books, that is, books published during the current year.

However, in children's book publishing, unlike adult book publishing, backlist sales can be more substantial than sales of current titles.

Here's the word from *Publishers Weekly* on children's backlist bestsellers. Leading the hardcover kiddie blockbuster roster are the Waldo books, *The Great Waldo Search*, *Where's Waldo*, and *Find Waldo*! by Martin Handford. Published between 1987 and 1989, these three books have sold a total of 2.5 million hardcover copies.

The next most popular author in hardcover is Dr. Seuss, with five books, all of which were published before 1960 and which have sold more than 200,000 copies each in 1990.

Topping the list of paperback bestsellers is *Charlotte's Web*, with over 500,000 copies sold in 1990. It was originally published in 1952. Maurice Sendak's *Where the Wild Things Are*, published in 1963, was number two on the paperback backlist bestseller list, having sold over 350,000 copies in 1990. And ten of the twenty top bestsellers were Berenstain Bear books. In fact, Berenstain Bears are a veritable industry in themselves—the forty or so titles in the series sold some 9.1 million copies in 1990.

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Research & Reports

If students could choose textbooks, which ones would they select? It's hard to say, according to a recent study, "If Children Chose Textbooks" reported in the *Journal of Research in Childhood Education*. Students do not, as a group, share a comprehensive point of view about basal readers, the study found. Students expressed diverse interests and attitudes that gave no one textbook series an advantage. However, several general issues surfaced around which student opinion frequently coalesced.

- The most valued material in basal readers were mystery stories, plays, and stories related to television shows or movies.
- Children repeatedly criticized stories about children their own age engaged in activities closely related to their own lives, labeling them boring.
- As for material surrounding the stories, students wanted "sensible questions that follow the order of the story so you can find the answers" and questions that asked for their personal feelings rather than factual recall.
- Students did not like skills exercises.

One conclusion the authors reached: there is a need for "increased sensitivity to the distinction between instructional materials and instruction. Students reacted positively only to twists and turns explicit in a story; apparently instruction is not helping them look for action below the surface.... Students valued questions perceived to be easy...apparently they are not learning to value questions that may be difficult to answer immediately or completely, but are well worth pursuing for the new or unexpected ways they move one's thinking. In large measure, working through the instructional materials seems to define instruction for the students involved in the study."

Only 5 out of 50 Ph.D. scientists could pass a vocabulary quiz based on sixth-grade science words. Twenty-three out of 25 Harvard graduating seniors did not know why it was hotter in summer than in winter. Fewer than 7% of American adults can be classified as "scientifically literate," that is, can understand the daily news that relates to science. These statistics are from the new book *Science Matters: Achieving Scientific Literacy* by Robert M. Hazen and James Trefil (Doubleday).

Only 18% of 8-year-olds prefer reading to video games. Only 10% of children find reading more pleasurable than television. And just 8% think reading is more fun than playing outside. These are a few of the findings from a Kellogg's/Reading Rainbow survey.

How would classroom teachers design the future of education? Fifty outstanding teachers answered this question in "Inventing the Future of Teaching," published by Impact II, The Teachers Network. These are some of their ideas:

- Campus-style community learning centers will be equipped with multimedia technology for research, global collaboration, and interest exploration. There will be language and science labs, performance areas, and gardens and greenhouses that will produce food for the school.
- The focus of education will be to help young people learn the techniques of gathering information; acquire the skills of reading, writing, communication and working cooperatively; and discover the great joy of learning.
- All classrooms will be arranged for collaborative, cooperative work. Desks and tables will be clustered; computers, books, and maps will be readily available.
- Teachers will control the curriculum, budget, hiring of all personnel, including administrators, and scheduling.
- Every teacher will have a fully-equipped office for conferences, and a telephone.

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Research & Reports

Computers have a place in early childhood education along with playdough and blocks and should be considered "just another early childhood material" that can become a powerful, enabling tool when coupled with appropriate software. This is the conclusion of a report "Computers in Early Education" by Daniel D. Shade and J. Allen Watson in *Journal of Educational Computing Research*. Among the findings:

- Young children can learn to operate computer hardware safely and competently, work successfully at the computer in small groups, help one another, take turns, and share.
- Computers do not reduce children's social interactions. Just as many social behaviors occur around the computer as occur in other activities.
- Children at the age of three have the capacity to learn from computer graphics.
- Programming, probably even LOGO commands, are too abstract for the four- and five-year old.
- The key to using computers successfully in early childhood is appropriate software.

The Software Publishers Association reports the following software sales to education (includes K-12 and college) in 1990: $85.8 million, PC/MS-DOS; $65 million, Apple II; and $12 million, Macintosh. MS-DOS education software sales increased 48.6% over the previous year, while Macintosh sales to education were up by 39.4%. For the software industry as a whole, the big success story of the year was the phenomenal growth of Microsoft Windows applications, which had a 198% sales increase.

For the 1989-90 school year, 50% of computer sales to schools were MS-DOS and 50% were Apple. In 1984, 64% of computers sold to schools were Apples.

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EPIEgram

The Newsletter About Educational Materials and Technology

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Primary Math Texts Result from Research

University of Chicago Program Yields Improved Curriculum

When researchers at the University of Chicago studied 500 K-3 math students in 1985, two things were clear: first, the students' early mathematics training ignored many of their capabilities; and second, schools in other countries expected children to achieve more in math, and they did.

Those two factors have been kept in mind by the developers of elementary school textbooks at The University of Chicago School Mathematics Project, a massive math curriculum research and development program. As of this fall, the third book in the elementary series, called *Everyday Mathematics*, will be available. "It's amazing how many schools have committed to the program already, even though not all of the books have been published," said Joanne Schiller, Publisher of Everyday Learning Corporation, the company that is publishing the elementary textbooks for the UCSMP. Textbooks for grades grades 3 to 6 will be published over the next three years.

The textbook series embodies other important principles set forth by USCMP researchers. For instance, they recognized that while children begin school with a lot of knowledge and intuition, little of this is abstract. "A principal task for the K-3 curriculum is to help children make the gradual transition from intuition and concrete operations to abstraction and skills with symbols," says Max Bell, Director of the UCSMP Primary Materials Component. *Continued on page 2*

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New Calculators Gain Popularity

Math Teachers Welcome 'Pocket Computer'

A new math teaching tool is gaining popularity around the country, with enthusiastic math teachers changing both their methods and the content of their courses as a result.

Causing the revolution is the graphing calculator, a pocket-size machine, slightly larger than a regular calculator, with a small screen. It makes graphic representations of complex equations, using visualization to help students understand or discover math concepts. The graphing calculator is really a pocket computer: it can store about 37 programs. Some of the calculators are more powerful than early Apple II computers. Priced at around $110, the graphing calculator can be used in algebra, pre-calculus, calculus, and trigonometry.

"Teachers are unbelievably enthusiastic. They achieve a new high in terms of professional development," says Franklin Demana. Demana and Bert K. Waits, both of the math department at Ohio State University, are the founding fathers of the graphing calculator movement. While figures on the extent of the use of graphing calculators are not available, Demana and Waits have trained more than 1000 teachers in their intensive, week-long workshops, and many of those teachers have conducted spinoff teacher training. The demand for their workshops is far greater than they can accommodate, they report.

Zalman Usiskin, Co-Director of The University of Chicago School Mathematics Project (UCSMP), says that textbooks for juniors and seniors in the UCSMP program assume the use of a graphing calculator. "The graphing calculator didn't change the content as much as the approach. It enables students to do much more," Usiskin says.

Usiskin believes that if teachers have textbooks that assume a graphing calculator, they can figure out for themselves how to implement it without teacher training. "If books don't mention graphing calculators, however, teachers may have a problem," he said.

Demana believes that teachers should receive training in using the graphing calculator, but he agrees that trying to use traditional textbooks with it usually does not work. "Once you assume the use of a graphing calculator, you can *Continued on page 2*

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Primary Math Texts Result From Research

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Another principle is that schools should take advantage of technology. Calculators are an important part of the program. Every child also has a slate, and measuring and drawing tools as well. For the classroom, there is a set of manipulatives that include a tape measure, compass, play money, dice, and dominoes.

All material in the series has been extensively field tested and evaluated by USCMP researchers before the final publication by Everyday Learning. For instance, the kindergarten book was first pilot-tested in 1985-86, after which it was revised. The next year seventeen Chicago-area schools participated in a field study with the books, with particularly good results in inner-city schools. The field study was evaluated, and the books were again revised, drawing on input from field-test teachers. Only then was the final edition published.

The USCMP researchers recognized the need for excellent instruction in the early grades, and so formulated a teacher-development component, which is also published by Everyday Learning and which can be used with the USCMP textbooks or with any other textbooks. USCMP advocates that, beginning in fourth grade, students have specialist mathematics teachers. For the primary grades, however, a trained generalist teacher is most suitable, but he or she should have a deeper understanding of mathematics than is the norm.

The teacher development package for primary grades consists of a year-long series of monthly, three-hour workshops designed to teach the pedagogical underpinnings of mathematics. The workshops encourage teachers to integrate mathematics into the entire school day, to gain hands-on experience in the use of project materials, to use calculators, and to introduce abstract concepts.

The main objective of the entire USCMP program is to upgrade the school mathematics program for the average student. Started in 1983, it has, in addition to the elementary textbook program and the teacher development component, a secondary textbook program, now complete and available from Scott Foresman. Also part of the USCMP is a resource development component that translates and analyzes math textbooks from other countries, and applies the findings to the development of its own textbooks.

New Calculators Gain Popularity

Continued from page 1

crank up the level at which you teach. Kids learn a lot more. Textbooks that don't draw on the technology have trivial, unrealistic problems."

Five years ago Demana and Waits began developing a math program called Calculator and Computer PreCalculus, also known as C^2PC, primarily for computers. But because of problems of access to computers for students, they began working with calculators.

When representatives from Texas Instruments showed up at one of their conferences, the educators started working with that company to design a calculator to meet the needs of high school students. The result was the TI- 81, released last year, a user-friendly graphing calculator that "reflects the collective wisdom of teachers participating in the C^2PC project."

Also growing out of that project was a textbook by Demana and Waits, *Mathematics: A Graphing Approach*, published by Addison Wesley. In this textbook, graphing calculators are not just an option; students are expected to have regular access to them.

Demana expects that the use of graphing calculators will soon become the norm. The National Council of Teachers of Mathematics standards assume that students in grades 9 to 12 have access to a graphing calculator at all times.

About the Hardware

Graphing calculators are available from a number of manufacturers, but the consensus seems to be that the TI-81 from Texas Instruments, developed over a period of years with the advice of educators, is at this time the one best suited to high school students.

For an in-depth review of graphing calculators, see the April, 1990, issue of *The Computing Teacher*. Since that article was published, the Casio 7700 has appeared on the market. While it can do many of the same things as the TI-81, Demana's opinion is that it is not as user- friendly.

The overhead projectable calculator, available from several manufacturers, is a useful tool for classroom demonstration. When purchasing one, keep in mind that the overhead projectable calculator should have the same functions and appearance as the calculator used by the students.

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Math Maverick Reports Success

Saxon Assails 'Establishment' Techniques

A math program that emphasizes review and practicing skills may appear out of step with the latest thinking in mathematics education. But Saxon Publishers' math textbooks draw rave reviews from many of their users.

John Saxon, the company's founder, claims that students taught by his methods see a rise in College Board scores of 20% at a minimum. In addition, he says, schools using his program usually double the senior math enrollment, triple the calculus enrollment, and reduce the number of students on the slow math track by fifty percent.

So far Saxon has sold over a million books to some 4000 schools. The self-styled maverick has appeared in *Time Magazine*, *Reader's Digest* and on *60 Minutes*, often berating the "math establishment."

Not all math educators are enamored of him or his program: some call his regimen of basic skills archaic and dull, and they claim he offers a rote approach that does not make students problem solvers. Texas, for instance, has consistently rejected the books for state adoption lists.

NCTM Standards 'Lack Proof'

Attacking the math establishment has not made Saxon friends. He has spoken out against the NCTM math standards, calling them "pie in the sky" and pointing out that there is absolutely no proof that they will work.

His method, in fact, is very much the opposite of the NCTM's problem-solving/applications approach. If students practice skills and learn concepts, they will automatically know how to apply them in any situation, he believes.

Saxon can produce a list of schools with impressive statistics of improvement in standardized test scores and enrollment in upper-level math classes. While he does not offer any controlled studies by outside researchers, interviews with teachers using his books elicit strongly favorable testimonials.

Topics in the Saxon math textbooks are introduced in increments that are coupled with continuous review of previously introduced concepts, until the concepts become wholly familiar and easy, and result in integrated understanding, he says. Each lesson will have 30 problems but only 4 to 6 will require newly-introduced concepts, and the remainder will be reviews. Geometry is integrated into arithmetic and algebra and is taught as part of those courses over a seven-year period.

Teachers are expected to function as coaches for the students, rather than as lecturers, and the program draws heavily on cooperative learning techniques.

Students Are Enthusiastic

Even though the Saxon program requires more homework than other math programs, students appear as enthusiastic as their teachers about their textbooks. John McManaman, chairman of the math department at Walt Whitman High School in Huntington, New York, is using the books for the first time this year. He terms his initial experience with them as "fantastic." His students, he says, complete every homework assignment. When visitors came to the school recently to see the program in action and spoke to students at length about it, the students, he said, "were better salespersons for the program than Mr. Saxon himself."

Says Saxon: "Students will work if their work is rewarded with learning. They refuse to work if all the work does is bombard them with things they don't know how to do."

Saxon uses unique marketing methods. Currently his full-page ads appearing in math-education journals challenge the University of Chicago School Mathematics Project to a 3-year competitive test. So sure is he of his methods that he has given away thousands of books to pilot programs because he feels the success of the program will result in future sales.

Saxon publishes books for fourth grade through high school, and a K-3 series in the works.

Software Copyright Info Available

"Is It Okay for Schools to Copy Software?," a flyer prepared by the Software Publishers Association to help schools understand the copyright law as it pertains to software, is available from the Software Publishers Association (SPA).

The brief flyer answers the most common questions schools ask about the legalities of software use. A detailed brochure, "Software Use and the Law," is also available to educational institutions from SPA.

Copies of either publication may be obtained from Software Publishers Association, 1730 M Street NW Suite 700, Washington DC 20036.

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National Computer Network Before Congress

High-Power System To Connect Scholarly Resources

A national, multi-gigabit-per-second network linking libraries, universities, research labs, and elementary and secondary schools may soon be a reality.

The National Research and Education Network (NREN) is the centerpiece of legislation, now before Congress, called the High-Performance Computing Act of 1991. Sponsored by Senator Albert Gore, its advocates are confident it will pass this year.

NREN is designed to link scientists, scholars, and researchers, and will also serve as a tool for elementary and secondary schools.

NREN would enable users to send the equivalent of the Encyclopedia Brittanica anywhere in the country in a few seconds. It eventually would be 1000 times faster that NSFNET, the existing supercomputer network for scientists and engineers.

'Enormous Facilitator' for Schools

According to John R. B. Clement, Director, K-12 Networking Project for EDUCOM, "The network will be an enormous facilitator—easier, more immediate, and more interactive than existing networks. While NREN offers the potential for high speed connection, the other aspect of it is that it can serve millions of students with low-capacity needs."

Students would be able to access university libraries, government databases and even scientific instruments, such as supercomputers, telescopes, and particle accelerators.

NREN will offer a user interface that is standard, consistent, and intuitive. Users would be able to connect anywhere in the country via a local phone call.

Currently, many networks exist that support K-12 education, such as KIDSNET, FrED Mail, and Learning Link. For the most part they are not connected to one another and have limited interfaces and support services. These networks, as well as higher level networks such as NSFNET, would likely be integrated into the national networking matrix. There would be improved linkage between users, resources, and services, as well as the creation of new resources and services.

Senator Gore sees NREN as the first step toward a universal fiber-optic network that would link every home, business and institution in the country, just as the telephone does now. "A national fiber-optic network could allow a schoolchild in Tennessee to use his PC to tap into the Library of Congress and access millions of 'electronic books.' ... And the network would deliver more than just text; with the push of a few buttons, the student could get text, music, or even video. The flow of information would not have to be one-way: The child could interact with the information, picking and choosing, just as he might browse through stacks in a library....

"That single fiber would mean escape from the bounds imposed by limited school budgets or poorly equipped classrooms.

Resources Now Being Developed

Universities are now developing on-line catalogs and other resources that will be available on NREN. For instance, scholars at Rutgers are creating The Medieval and Early Modern Databank, a history resource. At the University of California, Santa Barbara, researchers are setting up the Geographic Reference Information Network, a digitized data file of imagery and geographic information. The idea is to create a "virtual library," which will contain the totality of information resources and make them immediately accessible to students, scholars, and researchers throughout the country on NREN.

For schools, NREN could mean a revolution in the way information is brought into the classroom.

Tandy Offers Teachers New Home Computer

A home computer specially packaged and discounted for teachers is available from Radio Shack/Tandy. The recently-introduced Tandy 1000 RLX has a 80286-based system and includes a 40-MB hard drive, two-button mouse, color VGA monitor, DMP 240 color dot matrix printer, and classroom-management software.

Software bundled with the machine includes SchoolMate, Teacher's Helper, Tandy's classroom management software featuring an electronic Grade Book, Exam Maker, Roster and Scheduler, and Desk-Mate Version 3.5, which includes word processing, spreadsheet, database, telecommunications, calendar, and address book applications.

In addition, 15 popular personal, financial, and kitchen programs for family use are included. Price for the system through July 31 is $1799.95.

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Research & Reports

Word Processing Aids Writing; Problems for Networks

Reviewing all the research on word processing in the elementary school classroom, researcher Marilyn Cochran-Smith in her article "Elementary Word Processing and Writing" put forth these propositions:

- Word processing in the classroom is social as well as technical. Logistical requirements make word processing more public than writing with paper and pencil and often prompt teacher and students to construct new social arrangements, especially collaboration and coached writing situations that shape their theories and practices of writing.
- Word processing affects some of the students' composing processes: they make a greater number of revisions, though not necessarily more meaning-level revisions. Students who have well-developed writing and revising skills use the computer more effectively than those who do not.
- The quality and quantity of students' written products are affected. Many students produce slightly longer texts than they do with paper and pencil. They spend more time writing, produce neater texts with fewer errors. But in and of itself, word processing does not improve the overall quality of the students' writing.
- Students have positive attitudes toward word processing.

More than 48 percent of whites have access to computers in schools as compared with only 35.1 percent of blacks. Males and females now use computers equally, with usage for each at 46 percent. The figures are from a new Census Bureau study, "Computer Use in the United States: 1989" by Robert Kominski.

A number of practical problems must be resolved before the use of telecommunications in schools becomes more widespread, says Cleborne D. Maddux in "Educational Computing Telecommunications: The Road to Maturity" (*Educational Technology*). The obstacles include:

- Hardware and software costs. Though these costs continue to decline, they are still a factor, especially in low socioeconomic areas.
- Telephone expenses. Installation costs are substantial, as are monthly costs of renting telephone lines and long-distance telephone calls to access services.
- Complexity. This remains a major problem because the intricacies of setting baud rates, stop bits, and other technical matters are discouraging to many teachers.
- Lack of compatibility. Because there is no accepted standard for data transmission, a system may not be compatible with a telecommunications service.
- Lack of coherent documentation. Many networks do not produce intelligible documentation, leaving teachers to work it out through trial and error.

Advertisers pay $117,000 for a 30-second commercial on Channel One, the Whittle Communication television news program. There are two minutes of commercials daily ($468,000). This means revenues of more than $2.3 million a week. Currently some 8,000 schools have signed up for the news program, and as the number of schools increases the price of commercials will rise. (Now you know how they could afford to give away all that free equipment.)

Interesting facts from Quality Education Data's annual survey, "Technology in the Schools, 1990-91 School Year":

- The educational technology market will grow twice as fast as the textbook market between now and 1994. By then, estimated spending by schools on technology ($2.2billion) will approach their spending on textbooks ($2.6 billion.)
- Currently the ratio of computers to students is 20 to 1. To reduce the ratio by one student would require an investment of $100 million.

In a study of fourteen schools involved in restructuring, only a few were found to be using technology as a tool to support educational and organizational change. In most schools, technology was perceived to be for the most part unrelated to the school's restructuring efforts.

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Research & Reports

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Barriers to using technology to support school improvement include:

- The majority of educators understand little about the capacities of technology available to them. They are unable to articulate how technology might support restructuring goals.
- Those educators who are leaders in using technology are often not involved in the restructuring efforts.
- Most of the restructuring schools do not have enough technology, and technology is not viewed as essential by most of the decision makers.
- Most of the schools do not have the organizational capacity to deal with technology. Although they have computers, they experience difficulty with maintenance, management, software acquisition, updating, and so forth.
- Even educators who have computers and believe they are benefiting their students are unable to relate the benefits of technology to school restructuring.

These findings are from "Technology and Restructuring, Parts I and II" by Doris Ray (*The Computing Teacher*).

Electronic Encyclopedia Products Available

Three New Offerings for Schools

Educators are expressing increasing enthusiasm for electronic encyclopedias, and manufacturers are supplying new products for the school marketplace. Here are three new ones:

Tandy is offering its 2500 XL/2 computer, which has an internal CD-ROM drive, bundled with *Compton's MultiMedia Encyclopedia*. The *Compton's MultiMedia Encyclopedia* features 15,000 illustrations, 45 animated sequences, one hour of sound, 5800 maps, charts, and graphs, and the complete *Webster's Intermediate Dictionary*, all on a single CD-ROM disk. The price for the hardware-software package is $2899, a saving of $700 over buying each product separately. The electronic encyclopedia is now installed in 10,000 schools and libraries.

The first hand-held electronic encyclopedia, consisting of the entire text on the *Concise Columbia Encyclopedia*, is now available from Franklin Electronic Publishers, Inc. Called the *Columbia Electronic Encyclopedia*, it has search-and-retrieval software that allows users to type in key words to call up every related article. Information is displayed on an 8-line, high resolution screen. The unit weighs 12 ounces and measures 5 4/5" x 6" x 1". Cost for the package: $399.95.

The 1991 *Grolier Electronic Encyclopedia* has been extensively updated to include an audio component and hundreds of maps, as well as mouse support for the MS- DOS version. The new audio consists of excerpts from famous speeches, musical compositions, animal sounds, bird calls, and musical instruments. Also new are over 250 high-resolution, full-color maps of all the countries of the world and all 50 states. List price is $395. Schools who have the encyclopedia and wish to upgrade can do so for $125.

Apple IIe Card Now Ready

The Apple IIe Card, which allows the Macintosh LC computer to run Apple II software, is now available to schools at a list price of $199.

The card was developed to enable schools with an investment in Apple II hardware and software to upgrade to the new lost cost Macintosh systems.

The Apple IIe card utilizes the Macintosh LC's peripherals, including the monitor, keyboard, floppy drive, and mouse. The new card comes with 128K random access memory and can use up to 1 MB of the Macintosh LC's RAM.

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Museum Microscope Suited For Classrooms

Children Find it Easy to Use

A new kind of microscope, designed to accommodate as many as a million viewers a year in museums, is also finding its way into the classroom.

The Wentz-scope was devised by engineer Budd Wentz when he was unable to find a microscope suitable for easy viewing by children at the Hall of Science Museum in New York.

While the microscope incorporates no new optical principles, it enables several users at a time to view live microorganisms, enlarging them 1,000 times.

The microscope projects a greatly enlarged image on an internally-mounted ground-glass screen. That screen is viewed through a large magnifying glass and can be seen from any angle.

According to Wentz, the microscope solves the three major problems teachers encounter when using microscopes in a classroom. First, it's easy to look through. Second, students don't have to deal with reverse images. Everything moves the way an inexperienced user expects it to move. Third, students can't crack slides or strip gears by focusing too far. Teachers can preset the mechanism so that it can't "bottom out," but students can still fine-focus.

The microscope is priced at $1275 and Wentz suggests it be used on a rolling cart.

Writers Wanted

Why not spend your summer writing? ***EPIEgram*** welcomes contributions from its readers. If you wish to report research on educational materials and technology, to tell of a good or bad experience with materials or hardware, or simply to offer a unique point of view on using classroom resources, we'd like to hear from you. Please send a query letter briefly describing your article.

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EPIEgram

The Newsletter About Educational Materials and Technology

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Middle East Coverage Rated Poor

New Report Finds Errors, Distortions in Textbooks

Random careless errors, distortion, stereotypes, and misinformation are common in school textbook coverage of the Middle East and North Africa, according to a recent report.

Reviewing 60 geography, world history, and American history texts, the Middle East Outreach Council and the Middle East Studies Association have issued findings designed to assist text selection committees and curriculum coordinators.

While they discovered at least one excellent and several good books in each subject area, on the whole the inadequacies in coverage of the Middle East and North Africa were severe enough as to prompt one reviewer to comment that perhaps it is time for university-level educators "to send a red alert" to their precollegiate colleagues.

Incorrect or deficient historical accounts abound in these textbooks. Middle East history is portrayed from a Eurocentric or Americentric point of view, and, according to one reviewer, background information needed to understand issues simply doesn't exist. In one book, neither the Byzantines nor the Crusades were mentioned, and the Ottoman Empire was covered in one sentence. The texts offer little information about European colonialism, the rise of nationalism, and the struggles for independence, according to the report.

"This area is portrayed as one chronically hostile to American interests and, even more striking, as a nuisance, an area that inherently resists American efforts to bring peace, harmony, justice, etc. ...none of these texts really tries to convey the ethnic, religious, cultural, or geographic identity of the peoples or nations.... The United States is routinely portrayed as victim and/or policeman, dragged into the morass of a region that is divided by religious animosity (unlike the USA) and selfishly covetous of its oil wealth."

The textbooks do not give students information that would enable them to understand current events.

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Children's Classics Available in Spanish

A number of publishers have decided the time is right to publish Spanish versions of quality children's literature.

Farrar, Straus & Giroux this fall will launch *Mirasol: Libros Juveniles*, a Spanish-language series of high-quality juvenile books. The company plans to publish 14 titles a year in hardcover, with prices at $13.95 and $14.95. Titles for the first year include Charles Perrault's *Puss in Boots*, illustrated by Fred Marcellino, which was a recent Caldecott Honor book; *Brave Irene* by William Steig, a Caldecott and Newbery Medalist; and *Tuck Everlasting* by Natalie Babbitt.

Viking Penguin finds that the market for quality children's literature in Spanish is "definitely growing," and they are offering inexpensive paperback editions ($3.95 to $4.95) of some top notch titles in their Puffin line. Among the available books are Caldecott award-winning *The Snowy Day* by Jack Ezra Keats as well as *The Story of Ferdinand* by Munro Leaf. Puffins' sister company, Frederick Warne, publishes six Beatrix Potter books in Spanish.

Bradbury Publishers, a division of Macmillan, has Spanish-language editions of two Judy Blume titles, *Blubber* (*La Ballena*) and *Are You There God? It's Me, Margaret* (*Estas Ahi, Dios? Soy Yo, Margaret*).

According to Bradbury spokesperson David Walter, "The industry is recognizing that there is a need for these books. In some areas, particularly Texas, librarians are clamoring for more Spanish-language children's books." Bradbury's primary marketing efforts for Spanish language books are in New York, Florida, California and the Southwest.

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Middle East Coverage Rated Poor

Continued from page 1

"It would be impossible for students relying on these texts to understand the extreme sensitivity of Middle Easterners to any moves by Western powers to reinsert themselves into the region or to control Middle Eastern resources," wrote one reviewer.

"Crude distortion and errors" were found in the portrayal of Islam. In textbooks, Islam is almost always associated with violence. Writers often attribute to fanaticism what they don't know or understand, and nearly all leaders in the Middle East are considered fanatics.

"Muslim fundamentalism is termed 'a threat to peace' without adequate explanations of what it is that this movement is reacting to, and how social protest movements frequently become embedded in religious expression," according to the report.

Arab-Israeli conflicts are nearly always portrayed from the Israeli point of view, with no effort made to explain the other side. "It would be appropriate to indicate the level of U.S. support for Israel ($3-$5 billion a year). Middle Easterners all know this, and consequently link the U.S. to Israel's policies. This is a major factor in the Middle East today. There seems no obvious reason to obscure the relationship for the American student," according to the report.

"By early in the next century Muslims will constitute the second largest group in the U.S. after Christians. It is pressure from this community, often highly-skilled and educated, that will perhaps finally force textbook publishers to pay as much attention to the quality and accuracy of books as to their marketing and distributing," says Dale F. Eickelman, President of the Middle East Studies Association, in a preface to the report.

The report, which will be updated annually, gives individual analyses for each of the sixty textbooks. Copies of the report, titled *Middle East Studies Association/Middle East Outreach Council Text Evaluation Project*, are available for $20. Write Elizabeth Barlow, Evaluation Coordinator, Center for Middle Eastern and North African Studies, 144 Lane Hall, University of Michigan, Ann Arbor, MI 48109-1290.

Teacher Television to Debut in Fall

Teacher Television, a national cable program by and for teachers, will be on the air in the fall and it could eventually be a daily series.

Co-produced by The Learning Channel and the National Education Association, the program will cover topics such as national education policies, the use of new technologies in the classroom, and techniques of the nation's best teachers. Discipline-specific specials will address training needs of teachers.

The NEA and The Learning Channel are conducting a nationwide survey to learn about teachers' educational programming needs.

Teacher Television is part of a new strategy for The Learning Channel, recently acquired by Discovery Communications, Inc., which also owns The Discovery Channel. The Learning Channel's production budget will be quadrupled, with efforts going toward addressing the needs of "lifelong learners" as well as students and teachers.

Current programming on The Learning Channel is being reviewed to decide what to retain. The Learning Channel is carried by 1,192 cable systems and is available to an estimated 20,000 schools.

Major New Series From CTW

Children's Television Workshop, producers of *Sesame Street*, *3-2-1 Contact*, and *Square One TV*, has announced a major new television program promoting literacy for seven- to ten-year-olds.

Called *Ghostwriter*, the weekly PBS series is intended "to motivate children to enjoy and value reading and writing, to show them effective reading and writing strategies, and to provide them with opportunities to read and write," according to CTW.

This will be done through a series of mystery-adventure stories, incorporating contemporary MTV-like graphics and music. Set in an urban neighborhood, the program's main characters will be three girls and three boys who solve mysteries using reading and writing skills and get assistance from a ghost.

The television program is the centerpiece of the project, but in addition there will also be a nationally syndicated newspaper column that will feature a comic strip, games, and children's writing. Twenty million copies of a *Ghostwriter* magazine will be distributed free to students, and teacher materials will be available as well. The program will debut in the fall of 1992.

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The Newsletter About Educational Materials and Technology

Sexism in Textbooks

Has the Issue Been Resolved After 20 Years?

Sexism in textbooks, a major issue in the early 1970s, has received little attention in recent years. In fact, we hear little at all about sexism in education. "Gender equity' has become a buzz word, but it appears not to be a real priority as girls continue to lose ground in school.

The hierarchy of schools remains a testimony to just how ingrained sexism can be. In elementary schools, for instance, where women make up more than 80% of the teaching staff, fewer than 25% of the principals are female--a lower percentage than in 1928. Only 10% of high school principals are women, and this is true even though research indicates that academic achievement is higher in schools and districts in which women are administrators. This situation gives girls the message every school day that their horizons may be more restricted than those of boys.

Two decades ago when concern was first voiced about the lack of strong female characters and the stereotyped portrayal of females in textbooks, publishers took a hard look at their books, counted noses, and found that most of the noses were male. One study determined that 75% of textbook characters were male. As textbook committees began to demand textbooks that would more fairly portray women, publishers responded. Textbooks appeared to move away from pictures of mom in the kitchen baking cookies and to offer more female characters in a variety of roles. The problem seemed to be solved.

Researchers in the last few years have taken another look, and many believe we have not come as far as we had thought. Writing in *The Science Teacher* recently, J. A. Baylor found that science textbooks are still "pervasively gender-biased." She analyzed seven current texts for the visual images of women, and compared the findings to a 1973 study of earlier editions of the same books. She found a significant change in gender fairness in only two of the books. The other five had mixed results, "with no demonstrable overall trend toward gender parity."

Other studies have shown more subtle problems, according to W. Nibbelink, S. Stockdale, and M. Mangru in "Sex- Role Assignments in Elementary School Mathematics Textbooks." When they examined math textbooks for grades 3 to 6, researchers found that though sexism had been greatly eliminated, it had been done in a "safe" way. One safe way was to use a bunny as a character, rather than a girl. "Still another safe way," they write, "is to avoid roles that are clearly male or female by not using problems about pilots and kindergarten teachers in favor of problems about buying and reading books, or neutral problems that involve activities which society comfortably associates with either sex."

The researchers also found that in the late 1970s and 1980s, there was a sharp decrease in the problems showing persons in roles that are clearly male or female.

Conclude the authors: "These findings show that publishers did respond to the call for less sexist textbooks and that the response was a very safe one, one offering minimal challenge to existing stereotypes. Publishers, in other words, chose the safely nonsexist route, but not the openly anti-sexist."

A similar finding was reported by Hitchcock and Tompkins in "Basal Readers: Are They Still Sexist?" They discovered evidence of improvement in the way female main characters are represented. The roles of females in textbooks are much more varied than previously, they reported. Female characters were portrayed in 37 occupations, a dramatic increase from the 1960s when one study reported female characters in only five occupations.

Another discovery in the Hitchcock and Tompkins research was that female main characters were nearly equally represented with male main characters (18% male vs. 17% female). There was a hitch to this, however: 65% of main characters were classified as "other," meaning that the main role was shared by males and females or that the main character was an animal. Publishers, then, are not creating more female main characters--the percentage of female main characters remained at about the same level as in pre-feminist days. The authors conclude "Reading textbooks publishers appear to be avoiding the question of sexism by creating neutral and neutered characters in textbooks."

It appears that female students enter school intellectually ahead of boys and leave intellectually behind. While many complex factors are at work here, books play a major role in determining young people's ideas about themselves. Teachers and publishers should keep in mind that their choice of material can either subtly undermine girls' aspirations or inspire them to greater intellectual achievement.

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The Newsletter About Educational Materials and Technology

Interactive Multimedia Comes of Age

New Technologies and Products for School, Home

If you are confused about exactly what interactive multimedia is, you are not alone. The answer is, it can be many things. Many competing products and technologies fall under the interactive multimedia umbrella.

Two major multimedia innovations have hit the market in recent months and a third should be a reality by fall. These products will target both school and home users. They offer exciting possibilities for education; it appears certain that the classroom experience will not be a passive one for much longer.

Tandy Multimedia Personal Computer

Tandy Corporation has just announced what it calls the fully-configured Multimedia Personal Computer, which will bring stereo sound, animation capabilities, photographic-quality color images, a built-in CD-ROM player, and eventually full-motion video, all controlled by the Windows point- and-click system.

This is not a new technology but an extension of existing technologies. While Tandy is the first manufacturer to bring the multimedia personal computer to market, many other versions are expected in the next few months, and, for the most part, they will adhere to the Microsoft multimedia standards established last fall. These standards assure a large base of standardized hardware, which encourages the development of new software.

The Tandy Multimedia Personal Computer comes in several versions--80286-, 80386sx-, and 80386-based systems--and prices start around $2600. An industry standard PC with a minimum of a 10 MHZ 286 processor, 2 MB of memory, and VGA graphics can be upgraded to a Multimedia PC with an $800 upgrade kit.

Among the uses for the Multimedia PC might be electronic mail with voice messages, technical manuals with animated diagrams, reports with speech calling attention to important points. For schools, the educational applications seem unlimited.

CDTV

Commodore recently rolled out a product called CDTV, which stands for Commodore Dynamic Total Vision. Commodore calls it an "interactive multimedia player" that "offers computing power without computer complexity." CDTV is positioned as a home entertainment and education product; it looks somewhat like a audio CD player, but in fact it is basically a disguised Amiga computer with a built-in CD-ROM drive. It connects to the television set and operates by a point-and-click remote control device. The big news about the system is its price--under $1000, with CDTV disks that sell between $20 and $90.

More than 30 programs are currently available for CDTV, and more than 100 are expected by the end of the year. Some of these have been specially developed for CDTV while others have been adapted from CD-ROM formats. One of the original programs is the *World Vista Atlas*, which offers point-and-click maps, as well as high resolution photos, ethnic music from around the world, examples of foreign languages, and extensive statistical information. Other programs of interest to schools include reference works such as the *Grolier Encyclopedia*, *The American Heritage Encyclopedic Dictionary*, *The Timetable of Science and Invention*, and interactive story books.

CD-I

Major hardware manufacturer and software developers agreed on world-wide standards some time ago for an interactive multimedia product called CD-I. CD-I is not unlike CDTV. It is being developed for the home market, will incorporate computer and CD-ROM technology, and will operate via a simple remote control device. The standards for CD-I call for 16 parallel audio channels with a capacity of more than 19 hours of audio; video capabilities that include full-motion video; and a capacity of 7000 photographic-quality pictures. CD-I's progress has been slowed because of difficulty in developing the compression technique needed to provide the full-motion video. CD-I is promised for this year, and a varity of software programs are in development.

An example of how CD-I might work is an imaginative new product for it called *Children's Musical Theatre*, an easy-to-use interactive program which involves children in songwriting, musical style selection, and performance. Designed for children 4 to 9 years old, it allows them to write a song, choose the instruments and style, and then watch the band of animal musicians play it, or even take over themselves for one of the musicians.

Even more interactive multimedia technologies are in development, and no doubt one will eventually emerge to sweep the nation. Interactive multimedia appears to be the inevitable next step in the computer revolution.

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Research & Reports

NCTE Gives Text Guidelines; How to Evaluate Visuals

The National Council of Teachers of English has issued guidelines to help educators choose textbooks. The guidelines summarize current theory and research on language learning.

According to the NCTE, language arts textbooks should:

- center on children's own language.
- emphasize activities that focus on social uses of language.
- reflect the integrated nature of listening, speaking, writing, and reading.
- recognize broad patterns of developmental language growth.
- help teachers assess students' use of language.
- stimulate children's and teachers' thinking.
- be equity balanced.
- reflect the centrality of listening, speaking, writing, and reading for learning in all subject areas.

Two reading researchers have turned their attention to social studies textbooks, analyzing them according to recent cognitive research on text processing. In "Substantive and Methodological Considerations for Productive Textbook Analysis" by Isabel L. Beck and Margaret G. McKeown (*Handbook for Research on Social Studies Teaching and Learning: A Project of the National Council for the Social Studies*), the authors found these problems:

- Too many concepts were introduced in too few words. More elaboration of fewer concepts would have made texts more comprehensible.
- The point of text passages was often not made explicit and was often difficult to infer.
- Asides often overwhelm the purpose of a selection, distracting young students from the main point.
- Examples and comparisons, well-accepted instructional strategies, were inadequate or confusing.
- Often a cause of a phenomenon is stated without satisfactorily describing its consequences.
- Components of an explanation were sometimes in an illogical order.
- Some explanations were simply inadequate.

The authors summarize: "There does not seem to be consideration of the main concepts to be established and how to arrange information so that those concepts are explained and the most important ideas are emphasized. The result is that the text presentation resembles a tossing forth of ideas associated with a topic. Implications of the notion that knowledge is organized and that its organization is necessary to building understanding are ignored."

Recommendation for science teachers for evaluating visuals when selecting textbooks are given by William G. Holliday in "Textbook Illustration: Fact or Filler," in *The Science Teacher*. He advises:

- Shun science text containing a large proportion of decorative or "motivating" visuals.
- Favor science text containing numerous elaborative and summarizing visuals. In other words, visuals should clarify and expand on content, not just serve as an adornment.
- Read how each text treats a particular topic, and then judge the relative accuracy and impact of the visuals in conveying the information.
- Ask students to do the same and conduct your own focus group study.
- Read *The Psychology of Illustration* (2 vols.) by D. M. Willows and H. A. Hough.

"All students, regardless of academic ability, probably need the same amount of visuals, so the tradition of providing additional visuals to low ability students seems pointless. For example, research suggests that low ability students need visuals that remediate and circumvent their verbal inadequacies. This may mean more pictured and labeled concepts and fewer displayed relationships in each visual.... In contrast, high ability students should be challenged--provided with visuals allowing them to capitalize on their special abilities to process information. That may mean using visuals that communicate a large amount of complex information, including extensive flow diagrams and complex arrangements of drawings and photographs."

Is interactive video instruction most effective and efficient with individual learners or with small groups? This question was examined by Susan Cockayne in "Effect of Small Group Sizes on Learning with Interactive Video Disc" (*Educational Technology*). She found

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Research & Reports

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that small groups of up to five students could learn as effectively as students working singly with interactive videodisc instruction. Small groups required more time to complete an instructional unit than individual students, but when the amount of time was averaged over the number of students receiving instruction in each group, significantly greater instructional efficiency was shown to have been achieved by the groups.

The day when every student has his or her own portable computer may seem like Nirvana to some educators. But researchers in Britain found that giving laptop computers to twenty-two randomly selected students created some negative results. First, students had difficulty mastering the computer and software and complained about the extra care and handling required. Many of the students preferred handwriting to computer use, probably because they did not learn keyboarding and had to use "hunt and peck" typing. Researchers found that students did not like to use the laptop for math or science classes because of difficulty with entering equations, diagrams, etc. In other classrooms, they preferred handwriting because handwritten work could be produced from start to finish at the desk, whereas a laptop required a trip to the printer. For long, formal writing, however, students did prefer the laptop because revision was easier. The study, "Pupils with Portable Writing Machines," appeared in *Educational Review*.

The ultimate electronic library would consist of all the information in all the books in the world available on-line to your personal computer at home. Though much of the technology for electronic libraries, or "virtual libraries" as they are known, now exists, there are some major obstacles in the way of their becoming a reality.

According to D. LaMont Johnson and Linda L. Carr in "Is the Electronic Library for Real?" (*Electronic Technology*), the obstacles include:

- Most people do not yet see the need for the electronic library. Johnson and Carr see this as the overarching obstacle to its development.
- Intellectual property or copyright issues are more complicated for electronic information than for print, so that new laws and procedures will have to be formulated.
- Ways to organize massive amounts of information must be developed, so that the electronic library can be efficiently searched by the average computer user.
- Complex economic issues are involved in the massive conversion of printed material to an electronic medium. The authors believe that businesses will have to see a way to make a profit on this before it will become a reality.

Two-thirds of the country's teachers have fewer than 10 hours of computer training. Two-thirds of preservice teachers do not feel ready to use computers. Only eight states require some level of computer proficiency for initial certification. Only fourteen states encourage the provision of computer courses for teachers. These figures are reported in "Technology for Learning: Are Teachers being Prepared" by Robert Munday, Robert Windham, and Jennifer Stamper (*Electronic Technology*).

Writers Wanted

EPIEgram welcomes articles from educators. If you wish to report research on educational materials and technology, tell of a positive or negative experience with materials or hardware, or simply offer a unique point of view on using classroom resources, we'd like to hear from you. Please send a query letter briefly describing your article.

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Avoid Monitor Burn-In

Many Ways to Save Your Screen

The inside of a picture tube in a PC monitor is coated with metals called phosphors that glow when struck by an electron beam. When a monitor displays exactly the same image continuously for many hours, parts of the glowing phosphor can wear out, leaving a ghostly shadow of text or graphic on the screen. This wearing out is called burn-in.

Since it is unhealthy for a computer or monitor to be turned on and off frequently, to prevent burn-in you want merely to change the screen display. The easiest way to do this is to exit a program when you won't be working in it for a while.

If you have a DOS machine and the screen doesn't clear when you leave a program, put a "CLS" statement in your AUTOEXEC file; or get someone to do it who knows what we're talking about. You can also clear the screen at any time by typing CLS and <return> at the system prompt.

Also, software producers have come up with a variety of what are called "screen-saver" programs. These blank the screen after a specified period of non-use, say ten minutes. Then when you return to your rig, you can restore the display by hitting any key.

Some programs for the Apple Macintosh, and now also for the Microsoft Windows environment for DOS machines, will save your screen by displaying pretty, animated pictures. After Dark for Windows provides more than 30 little movies to gratify one's aesthetic sensibility whilst guarding one's phosphors. For instance, in the Fish module, creatures of the briny deep drift slowly across the screen; the Globe module shows the earth whirling through the cosmos.

These screen-saver programs and procedures will help you to vanquish "ghosts" and will eliminate the risk that you may have to look at last year's civics exam for the rest of your life. *W.F.*

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